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Railway Age

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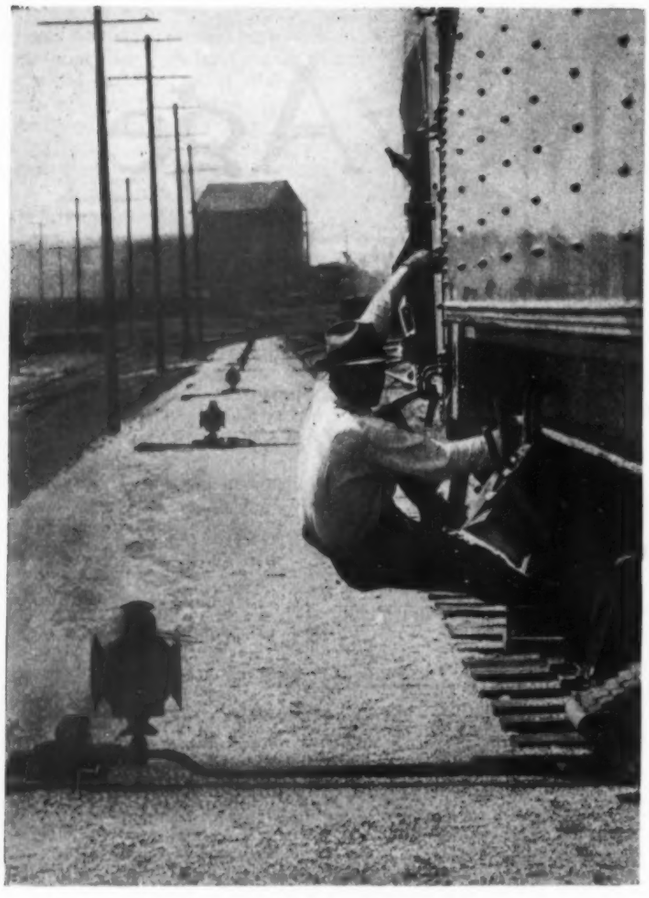
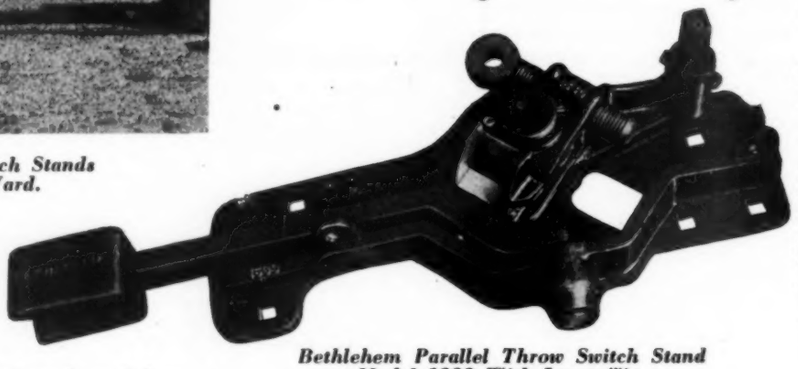


Bethlehem Parallel Throw Switch Stands Along Ladder Track in Yard.

Safe Extra Low Heavy-Duty



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BETHLEHEM
Parallel Throw Switch Stand-Model 1222

Railway Age

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What Is Economic Justification of Waterway Development?

WHEN high officials of the government advocate, for a purely economic purpose, the expenditure of large amounts of money raised by taxation, the public is entitled to information as to what these public officials regard as constituting economic justification for the expenditures in question.

Between December 10 and December 14, Secretary of War Patrick J. Hurley delivered before the River and Harbor Congress in Washington an address advocating the development of inland waterways; Lieutenant-Colonel Edmund L. Daley, as the representative of the chief of the board of engineers, United States Army, delivered a similar address before the American Farm Bureau Federation in Chicago; and Major General T. Q. Ashburn, chairman of the Inland Waterways Corporation, delivered a similar address before the students of the Harvard School of Business Administration. All these addresses were distributed to the press by the War department. Both the board of engineers and the Inland Waterways Corporation are parts of the War department, of which Secretary Hurley is the head. The board of engineers is charged with making investigations of proposed waterway projects and carrying out those that are adopted. The Inland Waterways Corporation operates the barge line on the Mississippi river system, which the government owns and which it claims to be operating to demonstrate the feasibility of successful private operation of common carriers on improved rivers and canals.

A Letter to Secretary Hurley

The *Railway Age* repeatedly has asserted, without the assertion ever having been challenged, that no authoritative statement has ever been made by any high official of the government as to what is regarded by government officials as the economic justification for the development of inland waterways, and for the large expenditures of public money which the proposed development of inland waterways would involve. This paper decided that Secretary of War Hurley was the proper official to which to apply for such a statement. Therefore, on December 19 the *Railway Age* addressed to Secretary Hurley the following letter:

"We have read with close attention and lively interest the War department press release regarding your address at Washington on December 10 before the National Rivers and Harbors Congress, and the speech of Lieutenant-Colonel Edmund L. Daley, representing the chief of engineers, before the American Farm Federation at Chicago on December 11.

"It is a fact, as stated by Colonel Daley, that many railroad executives have opposed waterway development. It is further true that most railway executives do not believe that further improvement of rivers and construction of inland canals is economically justifiable, because they believe,—

"1. That such waterway developments will not reduce costs of transportation as claimed, and,

"2. That such waterway development will injure the railways through diversion of traffic.

"The *Railway Age* is the most important railway paper in the United States. In consequence, its editorial views have exerted in the past and will exert in the future a considerable influence upon railway sentiment. As regards waterway development, it shares the views of the railway executives.

"Under the circumstances, it seems that those who do not share the government's present views regarding waterway development are entitled not only to a full statement of policy but also to the economic justification upon which that policy is based. Specifically, the *Railway Age* would like to have your answers, as the official head of the government department entrusted with waterway development, to the following questions:

"1. It is claimed that improvement of rivers and construction of canals will lower transportation costs. What is meant (a) that the rates charged for carriage by waterway alone will be lower than the total rail charges on the same traffic, or (b) that total waterway costs—including not only rates for carriage, but interest upon the investment in waterways and costs of maintaining them—will be lower than the corresponding rail rates?

"2. Do you believe that upon the rivers now improved or proposed for improvement total waterway costs—not conveyance charges alone—are or will be less than the railway rates for performing the same service?

"3. If you do so believe, what evidence can you cite in support of this belief, whether derived from past experience in the case of waterways now improved, or from engineering or economic investigations regarding proposed improvements?

"4. In the press release based on Colonel Daley's speech it is stated: 'Waterways may hope for their complete utilization when the railroads are allowed to join in their use to augment their own rail service....' Does this statement imply that it will be, or is it your opinion that it should be, the policy of the government to permit the railways to operate water carriers on present or proposed improved rivers and inland canals? As you know, it is the government's present policy to exclude vessels owned by railways from the Great Lakes and the Panama canal.

"Your answers to the foregoing questions will be of material benefit in making clear just what is the government's policy

regarding waterway development, and the basis of economic principles and facts upon which that policy is justified."

The War Department and "Controversial Discussion"

On January 8 Secretary Hurley wrote a reply to the above letter, in which he said:

"In reply to your letter of December 19, 1929, I may assure you that the War department has no intention of inviting controversial discussion as to the relative merits of various forms of transportation. As a matter of fact, the national policy in this regard was quoted in my speech of December 10, 1929, as follows:

"'For more than one hundred years, the Federal government has been engaged in improving waterways and harbors and promoting water transportation. In the Transportation act of 1920, the Congress of the United States defined the national policy as follows:

"'"It is hereby declared to be the policy of Congress to promote, encourage, and develop water transportation, service, and facilities in connection with the commerce of the United States, and to foster and preserve in full vigor both rail and water transportation."'"

Whether transportation by improved rivers and canals can be made cheaper than by rail long has been, and is now, a controverted question. Therefore, when officials of the War department advocate the improvement of rivers and the construction of canals to "cheapen" transportation, they are actually participating in the "controversial discussion" which Secretary Hurley says the War department "has no intention of inviting" "as to the relative merits of various forms of transportation." In the addresses of Secretary Hurley, Lieutenant-Colonel Daley, and Major General Ashburn, above mentioned, claims were definitely made as to the merits of inland water transportation, and especially as respects its "cheapness"; and these claims could have no significance excepting as indicating that inland water transportation would have certain advantages over rail transportation, and especially the merit of greater "cheapness."

The first three questions the *Railway Age* submitted to Secretary Hurley were obviously intended to get from him, first, a definition of what War department officials mean when they make the claim of greater "cheapness" for inland water transportation, and, secondly, to secure from him a citation of the evidence upon which War department officials base this claim of greater "cheapness." Secretary Hurley's reply to our letter is in no sense an answer to these questions. Government officials cannot justify themselves in making definite claims as to the advantages of water transportation merely by citing, as Secretary Hurley does, the past policy of the government regarding waterways, which many persons regard as having been a failure, and the provision of the Transportation act which he quotes.

Who Will Answer These Questions?

Secretary Hurley's letter does have the merit of calling attention to the existence of a very remarkable situation. A nation-wide controversy is going on as to the relative economic advantages of transportation by inland waterways and by railways. In this controversy the principal propagandists for the advantages of inland water as compared with rail transportation are officials of the national government, and especially of the War department. No high official of the government has as yet, however, as far as the *Railway Age* knows, clearly defined what government officials actually mean when they make the claim that inland water transportation is or will be cheaper than rail transportation; and now, when the head of the government department charged with operating the barge line upon the Mississippi river system, and with investigating and carrying out projects of waterway improvement, is asked specifically what he and his subordinates mean when they refer to the "cheapness" of transportation by inland waterways, he evades the issue.

Obviously, until the questions submitted by the *Railway Age* to Secretary Hurley are authoritatively answered by some high official of the national government the public will not know what high government officials actually mean when they say, as President Hoover did in his Louisville speech, that only those waterways should be developed for which there is "economic justification."

The Jobber and Purchasing

MANY railway men associated with the purchasing of railway supplies seem to feel that buying would be improved by eliminating the jobber. Commentators have written about it and others are always ready to talk about it. Some even think that railroads should organize to force the jobber out of business. The fact remains, however, that jobbers are still plentiful and that railways continue to do much of their business through them. The objectors may be right, but one cannot calmly see jobbing in retrospect and agree that it is either practical or desirable to cast it out. The chances are that the jobbers of railway supplies would no sooner disappear than conditions would arise urging, if not requiring, their return. That is the history of jobbing.

If jobbing and scalping were always one and the same, being conducted by individuals or groups that produce nothing and merely prey upon the trade for their percentage, they should be suppressed, but most jobbing does not fall into that category. Broadly, the manufacturer's agent and the wholesaler are jobbers and, if it were known, a goodly number of manufacturers are jobbers of many of the commodities they sell. Lately it even appears that the activities of some trade associations savour strongly of jobbing practices. When jobbing persists in the face of opposition it does so largely as a channel of distribution and credit. The jobber exacts his profit, but the greatest error some buyers make is in assuming that this expense can be avoided merely by dealing directly with the manufacturers or producers of their supplies.

Where large scale buying is done under conditions attractive to the producer as well as the buyer, direct

action is obviously the economical procedure, but all railway buying is by no means of this kind. This is particularly true of the present decade when hand-to-mouth methods are widely followed, much piece-meal buying is favored and orders that were once placed with a few concerns are parceled among many or distributed so that each bidder gets orders only for those articles upon which he has quoted the lowest price. Under such conditions, it is small wonder that many producers, realizing more fully than many buyers, the added costs to business of uncertainties in the flow of orders or the increased burden of distribution, stand by the broker and jobber who can assure him a market. It is equally apparent why the jobbers, whom many buyers would avoid, are frequently very much sought after for the quick and sure delivery of materials which they can provide when deliveries on piece-meal and otherwise unprofitable orders placed with producers are not forthcoming.

There is a lot of bad jobbing in the business, but there is also much bad buying, and the probability is that railway buyers who grow restive under the so-called jobbing burden could profitably turn a spot-light on their own methods and policies of purchasing in searching for a solution of their problems.

Railway Service and Business

UNDER the heading "Manufacturers and Steel Producers Testify to Improved Service," the *Railway Age* publishes elsewhere in this issue the second of a series of articles quoting from letters received by it from business leaders testifying to the great improvement that has been made in railway service within recent years, and the benefits that are being derived from it by the industry and commerce of the country.

That the increase in the speed and dependability of freight service has made possible huge economies through reductions of inventories is well known. In the article published this week, as well as in that published last week, business leaders mention numerous other important benefits. Many concerns have been enabled to schedule their operations better and stabilize their labor forces. Savings in transportation costs have been made by shipping goods by freight which, when freight transportation was less satisfactory, were shipped by express. The necessity for shippers to trace their freight has been virtually eliminated. Loss and damage of freight, and the trouble and expense of collecting claims for them, have been greatly reduced. Producer and consumer have been, in effect, brought closer together, and commodity prices have been stabilized, with the result of reducing speculation in commodities and the risks involved. Many branch houses have been closed because improved transportation has made it possible to move products promptly from where they are produced to their ultimate purchasers.

The list of benefits that improved railway service has conferred upon American business could be almost indefinitely extended, and one of the most gratifying facts about the entire matter is the willingness manifested by business leaders to tell of these benefits and to give the railways generous commendation for what they have accomplished.

A Lesson in Preparedness

THE snow storm which swept the middle west late in December, and was particularly severe in the vicinity of Chicago, resulted in the most complete demoralization of railway traffic that has occurred since the great storm of 1918. In conformity with previous experience, the difficulty was most pronounced in the terminals. The completeness of the tie-up of some roads was evidenced by the abandonment of suburban service, while on other roads it was manifested by inability to operate through trains into the terminal stations, thereby necessitating the transfer of passengers to other forms of transportation at outlying stations. In other instances, efforts to move fast, excess-fare trains over the remaining six or seven miles into the terminals resulted in delays of as much as five or six hours with a consequent loss of thousands of dollars in refunds to passengers, to say nothing of the many failures to make connections.

The railways have made great progress in the last few years in improving the regularity of service—largely by detecting and correcting those conditions which give rise to delays in time of storms. Indicative of these measures is the program now being prosecuted by a single road, at an estimated outlay of $12,000,000, to raise its lines above high water levels and thereby insure against traffic interruptions during floods. The recent experience in the central west raises the question of the advisability of similar efforts to protect against snow blockades.

Blizzards, like high water, cannot be avoided, but their effects, like those of floods, can be overcome in large measure by adequate preparation. Most snow troubles result from lack of provision for overcoming them. Because of the infrequency of severe storms, terminal maintenance and operating officers take chances, and when storms break, they are not prepared with either the equipment or the men to combat them. As a result, before they get properly organized, their interlocking plants have become inoperative, their tracks are snowed in and their terminals are completely blocked.

Such a situation might have been unavoidable in the past, but it is out of keeping with present standards of service. The prevailing high standard of service, made possible by modern operating methods, demands that precautions be taken to prevent tie-ups during blizzards in the same way that so many roads have safeguarded their main lines against interruptions by floods. That some roads recognize this necessity more

fully than others is indicated by the fact that some were able to maintain service during and after the recent storm better than others. The lesson of the recent storm is one of preparedness.

Passenger Officers as Sales Managers

THE concept of a passenger traffic officer as an executive charged with the details of providing transportation service—rates, schedules, the securing of suitable equipment—is changing. More and more his function is coming to be recognized as analogous to that of a sales manager of an industrial concern. The sales manager's duties, of course, go much further than disposing of whatever commodities in whatever quantity the production department may choose to deliver. Rather he must be consulted as to what products he believes the public will buy, what quality is demanded and what volume will be absorbed. Until 1920 passenger traffic departments had few pressing sales problems. Their chief concern was to keep their organizations working efficiently to care adequately for business which came without especial sales effort. Now the difficulties of caring for the details of providing the service have dwindled greatly by comparison with the new difficulty of building up, or even retaining, passenger business. The essential nature of the position of a passenger traffic officer has changed in less than a decade.

Probably nowhere has yet appeared a more succinct analysis of the new duties and new problems of this office than the address of the retiring president of the American Association of Passenger Traffic Officers, J. D. Rahner, delivered at the convention of that association last fall in Winnipeg, which address is published in the recently issued proceedings of that meeting. Mr. Rahner in his address said that it was important to estimate not only what in the way of railroad transportation the public would buy, but also what it would not buy. He differentiated between railroads and other industries by pointing out that whereas both may engage in mass production, most industries may sell their products at retail in small units, while railroads must sell, as well as produce, their product in large quantities. He further showed that the really perplexing problems of the passenger traffic departments cannot be solved by the action of individuals, but require co-operative action by all railroads.

What is the future market for railroad passenger transportation? What type of service will enjoy the greatest patronage? What steps should be taken to scale down passenger train-miles and passenger car-miles to actual service demands, so that business which is secured may be handled at a profit? All these are merchandising and sales problems of great magnitude and complexity. They cannot be solved without the application of first rate merchandising and sales ability. A general understanding of the new concept of the functions of the passenger traffic officer is needed, and a consideration of Mr. Rahner's thesis will, we believe, prove distinctly helpful toward that end.

Studying Special Problems

IN the not distant past railroading was more or less of a general business, with supervision and methods on a general basis. A system whereby general freight was handled was considered, in many instances, to be proper for the handling of all freight. It was not until some of these general operations began to be examined that the fallacy of this policy was realized.

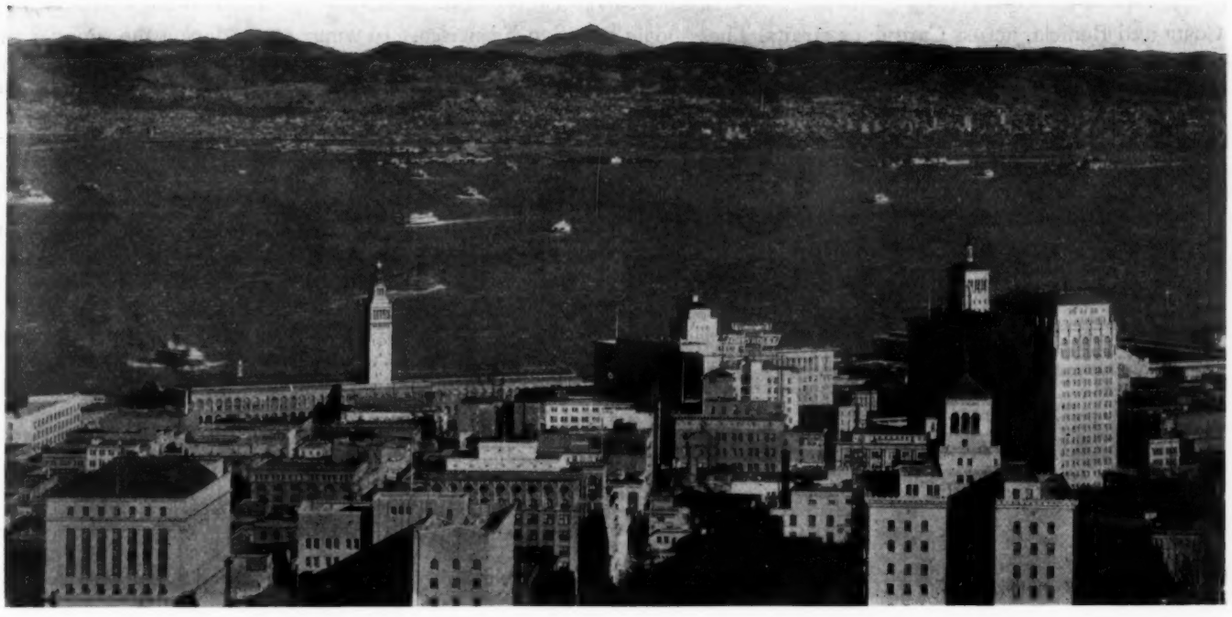
When careful studies were made of specific operations, the tremendous possibilities for improvement began to be realized. There then followed a vastly increased efficiency in the handling of certain classes of freight that has had a marked effect upon operation.

While the handling of perishables and coal has been outstanding in the way of increased efficiency, because of the enormous volume of these classes of traffic handled, studies have extended far beyond this, to specialized operations, which, although of smaller volume, nevertheless present important problems to the individual railroads. From the iron mines of the north to the phosphate mines in Florida, from the marble quarries of Vermont to the bauxite mines in Utah, these studies have been carried on. In more and more cases recently, it has been observed that the immediate supervision of this type of operation is being placed in the hands of specialists. Sometimes they have distinctive titles, such as superintendent of ore operations; in other cases they are designated merely as trainmasters, or assistant trainmasters, but, in every case, they are men thoroughly familiar with the particular specialized operation of which they are in charge, and alert and eager to seize every opportunity for increased efficiency.

The oil fields, too, have been given the benefit of these special studies, and the attention of experienced men. The "boom" oil field, with its sudden flood of freight, represented, only a few years ago, an extremely serious problem. It was not unusual for a railroad to be blocked for miles in each direction from the field. These conditions no longer exist. The freight for the last three or four "boom" fields that have come in has been handled without delays, and without blocking the railroad.

The wheat movement has experienced a similar metamorphosis. Except in seasons of unusually bad loading conditions, the vast quantities of grain that are dumped upon the railroads in a small space of time are hauled to the markets, in general, without delays and embargoes.

It is only necessary to glance at the improved operating statistics to show that these studies of specialized operations have been worth while, and should be continued.



San Francisco Bay, Where the Southern Pacific Ferries Ply

Bridging San Francisco Bay

Southern Pacific and its subsidiaries operate extensive ferry service

MORE than 2,000,000 passengers are being transported across San Francisco Bay monthly by the Southern Pacific ferries, in addition to mail, express and baggage in large quantities. The Southern Pacific Golden Gate Ferries Ltd., a stock-controlled subsidiary operating the auto ferries, handles an average of 15,875 vehicles daily and 29,400 on Sundays and holidays. During all the years of operation, under all sorts of weather conditions, there has never been a passenger lost, except in the case of suicides, and many such attempts have been frustrated.

This remarkable record for safety and service has been established by competent inspection and periodic repairs to the boats in the service, and by extreme care in selecting and training the personnel. The supervision is entrusted to railway men, backed by a trained and experienced corps of marine experts thoroughly familiar with navigation conditions in the bay, where the weather is such that a dense fog may succeed brilliant sunshine at almost any moment.

The Passenger Ferries

Three boats operate between San Francisco and the rail terminus at Oakland Pier, transporting main line passengers and those destined to local points, between the East Bay district and San Francisco. Each of the boats is certified by the U. S. Inspection Service to carry 4,000 passengers.

The distance across the bay by Ferry is 3.5 miles, and the run is made in 18 min. From 6 a.m. until 7:40 p.m., a 20-min. service is provided, after which a 40-min. service is operated to 1:20 a.m., at which hour the last boat leaves San Francisco, returning from Oakland Pier at 1:45 a.m. The three boats make an average of 50 round trips a day, or a total of 350 miles.

Two of these boats are manned by three crews each and are fully crewed and available for service 24 hr. a day. The third boat has two crews, on eight-hour shifts. Each deck crew consists of a captain, a first officer, a second officer and nine deckhands, two of whom are stationed on the upper deck and seven on the lower deck. Each of these deckhands has a specified portion of the deck to keep clean and the spotlessness of these boats is the subject of frequent remark. Each engine crew consists of a chief engineer, an assistant chief engineer and three firemen.

In addition to this service, two boats operate betweeen San Francisco and Alameda, maintaining 30-min. service between 6:15 a.m. and 7:45 p.m., and 45-min. service until 12:15 a.m. One of these boats is manned by three crews and available 24 hr. a day, while the other is manned by two crews.

The distance between Alameda mole and San Francisco is 3.2 miles, and the boats make a total of 68 single trips, or 222.3 miles, daily. While these boats are primarily for passenger service, they carry vehicles during certain hours of the day. A total of 2,389,922 passengers was carried on these boats during the first six months of 1929, not counting those passengers transported in vehicles.

The Southern Pacific also operates a car transfer between Oakland and San Francisco, and, during busy seasons, this service is augmented with a steel car barge and a tug. This run was put on principally to expedite cars of perishables.

Two car transfers are also operated between Port

Costa and Benicia, across Carquinez straits. These boats are the largest of their kind in the world and are used to transfer main line passenger and freight trains. Each has a capacity of 24 passenger cars and 36 freight cars. They are three-crewed and in service 24 hr. a day. Each crew consists of a captain, a first officer, a second officer,

One of the S. P. Fleet

five deckhands, a chief engineer, an assistant chief engineer, a first assistant engineer and six firemen. When the Suisun Bay bridge, now under construction, is completed, this car transfer will be eliminated.

The dimensions of the boats in these services are given in Table 1.

Auto Ferries

On May 1, 1929, the Southern Pacific Company transferred 11 automobile ferry boats to the Southern Pacific Golden Gate Ferries, Limited. This subsidiary was formed to take over the operation and management of all the automobile ferries to San Francisco Bay, and represents a consolidation of four companies formerly operating independently.

The advantages of the consolidation from a service standpoint were clearly apparent on Sundays and holidays during the summer, for these ferries serve the

Table I. S. P. Ferry Boats and Car Transfers

Run	Name	Length Overall Passenger Ferries	Seating Capacity	Tonnage Gross	Tonnage Net
Oakland Pier	Sacramento	295 ft.	1,907	2,254	1,378
" "	Alameda	239 ft.	1,895	2,303	1,320
" "	Santa Clara	293 ft.	1,733	2,282	1,308
Alameda Mole	Oakland	283 ft.	1,482	1,672	1,108
" "	Berkeley	279 ft.	1,472	1,945	1,245
		Car Transfers			
Oakland Pier	Transit	338 ft.	14 frt. cars	1,566	1,079
Benecia	Solano	420 ft.	36 frt. and 24 pass. cars	3,549	3,057
"	Contra Costa	433 ft.	36 frt. and 24 pass. cars	4,483	3,276

week-end resorts surrounding the bay. Formerly, the lines of cars waiting for ferries blocked the roads for miles and it was frequently as late as 3 a.m. before the accumulation was cleaned up and all the autos returned to San Francisco. In comparison, during the summer of 1929, there was no congestion caused by waiting for ferries, and all the cars were ferried by midnight on every occasion. In fact, during the peak of travel, the ferry capacity was greater than the capacity of the highway. The economies possible in the cost of operation under a unified system of control are, of course, readily apparent.

The number of boats in this service, their routes and the mileage are shown in Table 2. In addition, the Southern Pacific and the Northwestern Pacific occasionally handle automobiles on their non-peak passenger boats, for the S. P. G. G. F., between San Francisco and Alameda, Sausalito and Tiburon.

These boats are classified as follows:

Six Diesel electric motor ships, with steel hulls, 256 ft. long, 66 ft. beam, built in 1926, capacity 90 autos, and seven smaller Diesel-electrics, capacity 60 to 75 cars.

Sixteen steamships, 12 of which are constructed solely for handling automobiles, and four of the steamship type, which handle autos, freight and passengers on the San

Table II. Number of Boats, Routes and Mileage

Boats Mon. to Sat.	Boats Sun. and Holi.	Routes	Mileage
6	7	San Francisco-Oakland Pier	3.5
1	1	San Francisco-Alameda Mole	3.3
1	0	San Francisco-Broadway, Oakland	6.4
2	2	San Francisco-Richmond	7.8
3	5	San Francisco-Berkeley	4.4
3	10	San Francisco-Sausalito	4.6
2	2	San Francisco-Vallejo	30.0
Average boat miles per month			84,743
Average number of passengers carried per month			1,191,731
Average number of vehicles carried per month			485,193
Average number of tons of freight carried on vehicles per month			48,192
Average number of tons of deck freight carried per month			2,725

Francisco-Vallejo run. Eight of these are of steel construction, two have capacities of 100 cars each, eight from 60 to 75 cars, and six from 40 to 50 cars. The average number of trips, together with the average number of vehicles carried, are given in Table 3.

Operating Features

On the principal routes, two lines of traffic are loaded and 140 vehicles can be handled over one bridge or apron in seven minutes. At Oakland Pier terminal, the fares are collected from the auto drivers as they pass the station, and are recorded on an Ohmer register. Two men on duty during peak movements can collect fares for between 500 to 700 vehicles an hour, with an average of 99 per cent efficiency.

The consolidated operations have produced a great saving, in that, on Sundays and holidays, when the traffic is at its height, boats are transferred from one route to another, wherever the service is most in demand.

Over 800 men are employed in the actual operation of these boats, with 200 other employees, such as ticket sellers, ticket collectors and traffic officers, at terminals.

San Francisco Sky Line from a Southern Pacific Ferry

In addition, a large staff of restaurant employees is maintained.

Schedules

Oakland Pier: Boats leave every 12 min. all day, every 20 min. 8 p.m. to 1 a.m., then hourly until 6 a.m.

Alameda: Boats leave every 30 min. during the day, and hourly 8:15 p.m. to 12:15 a.m.

Oakland-Broadway: Boats leave every 90 min., 7:45 a.m. to 5:45 p.m.

Richmond: Boats leave every 40 min. during the day and every 90 min., 8:40 p.m. to 11:45 p.m.

Berkeley: Boats leave every 20 min. during the day and every 30 min. 9:30 p.m. to 1:30 a.m., then hourly until 6:30 a.m.

Sausalito: Boats leave every 20 min. during the day, every 30 min. 9 p.m. to 1 a.m., then hourly until 5 a.m.

Vallejo: Leave 7:30 a.m., 9:45 a.m., 12:30 p.m., 3:20 p.m., 6 p.m., and 8:30 p.m.

To facilitate the service into Berkeley, where the bay is shallow, a concrete-pile causeway was built a few years ago, costing $700,000. This pier extends from the Berkeley shore to deep water, a distance of 3.5 miles, and permits the operation of large boats in this service.

Commissary Activities

The Southern Pacific Company operates all commissary activities, not only on its own passenger ferries, but on the boats of the Southern Pacific Golden Gate ferries as well. On each boat there is a large and well-equipped restaurant, where an elaborate menu is offered at popular prices. The service is necessarily efficient and fast, since only 18 min. time is available between San Francisco and the East Bay cities, in which to serve the patrons.

A large, well-equipped commissary is maintained at the ferry landing at San Francisco, which serves the ferries exclusively. This commissary is equipped with a large storage room for supplies, storage ice-boxes with mechanical refrigeration, a well-equipped bake shop with electric ovens, and a large kitchen in which the ranges and other appliances are connected with gas.

Table III. Southern Pacific Golden Gate Auto Ferries

Route	Number of Trips Daily	Number of Trips Sundays & Holidays	Average No. of Vehicles Carried Daily	Average No. of Vehicles Carried Sundays & Holidays
*Oakland Pier	181	220	8,500	12,500
Alameda	16	24	490	1,200
Oakland-Broadway	14	0	60	0
Richmond	40	42	225	550
*Berkeley	118	170	3,000	6,300
*Sausalito	118	323	3,500	8,700
Vallejo	12	12	100	150
	499	791	15,875	29,400

* Operates 24 hours per day.

The bake shop is an unusually large one, and an average of 500 pies and 5,000 hand-made doughnuts are baked daily, besides all rolls, muffins and hot breads used on the ferries. All vegetables, salad dressings and soups are prepared and cooked in the commissary kitchen, the food being transported to the ferries in special hot containers, thus reducing the work in the boat kitchens to a minimum and insuring a uniformly excellent quality of cooking. The salad dressings are put up in quart jars and issued to the boats under refrigeration.

On each boat there is a news-stand operated by the commissary department of the S. P., while the boats in the Oakland run also have two soda fountains, one on each deck, equipped with the latest in fixtures and equipment.

More than two million meals are served on the boats annually, and notwithstanding the elaborate menus and prompt and expensive service, all of the restaurants, as well as the news-stands and soda fountains, regularly show a profit.

Freight Car Loading

WASHINGTON, D. C.

REVENUE freight car loading in the week ended January 4 amounted to 776,259 cars, a decrease of 22,423 cars as compared with the corresponding week of last year but an increase of 22,012 cars as compared with 1928. As compared with 1929 all commodity classifications except coal showed a reduction, while as compared with 1928 all but livestock, forest products and merchandise showed an increase. The Pocahontas and Southwestern districts reported increases as compared with 1929 and all but the Southern and Northwestern increases as compared with 1928. The summary, as compiled by the Car Service Division of the American Railway Association, follows:

Revenue Freight Car Loading

Week Ended January 4, 1930

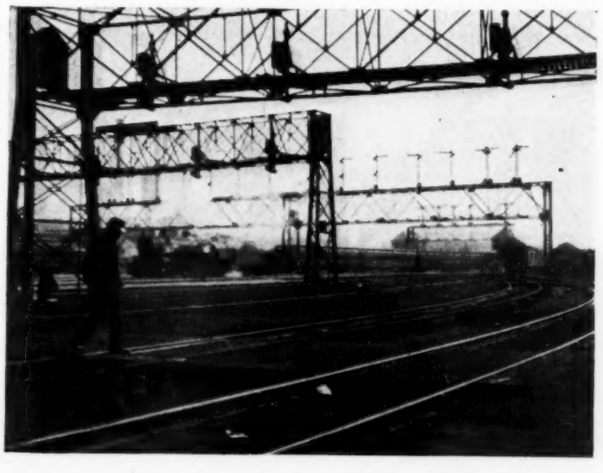
Districts	1930	1929	1928
Eastern	172,369	178,128	167,897
Allegheny	156,375	161,308	151,760
Pocahontas	53,562	49,212	46,375
Southern	119,590	123,652	120,816
Northwestern	87,032	93,264	92,562
Central Western	117,665	123,765	113,914
Southwestern	69,666	69,353	60,923
Total Western Districts	274,363	286,382	267,399
Total All Roads	776,259	798,682	754,247
Commodities			
Grain and Grain Products	41,102	41,855	36,715
Live Stock	22,428	26,866	29,058
Coal	175,678	171,623	174,977
Coke	10,473	10,844	10,035
Forest Products	40,643	44,865	44,642
Ore	8,847	8,994	7,379
Merchandise L.C.L.	197,371	201,155	199,766
Miscellaneous	279,717	292,480	251,675
January 4	776,259	798,682	754,247
December 28	.....	638,445	667,974
December 21	.....	842,483	900,620
December 14	.....	923,240	963,668
December 7	.....	936,825	984,773

Car Loading in Canada

Revenue car loadings at stations in Canada for the week ended January 4 totaled 44,310 cars, an increase of 2,806 cars over the previous week and a decrease of 1,796 cars from the same week last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada		
January 4, 1930	44,310	31,247
December 28, 1929	41,504	31,817
December 21, 1929	54,079	32,111
January 5, 1929	46,106	30,814
Cumulative Totals for Canada		
January 4, 1930	44,310	31,247
January 5, 1929	46,106	30,814
January 7, 1928	51,760	29,122

* * *



At the South Station, Boston, Mass.

The Timber Treating Plant with the Mission Range in the Background; the Mill at Somers Is Located on the Shore of Flathead Lake

Great Northern Treats Ties in Modern Plant

Operation is co-ordinated with that of a saw mill at Somers, Mont., in the heart of large timbered area

OUT in Montana, on the shores of Flathead lake, the Great Northern conducts a saw mill and timber treating operation that is unique among railway enterprises. Conducted for the purpose of developing the timbered area comprising that part of Northwestern Montana which lies between the Continental divide and the Montana-Idaho state line, the operations have been carried on for 28 years, but the timber holdings are of such extent that the rapid reforestation, coupled with a plan of selective logging, assures virtually a perpetual supply at the present rate of cut.

Timber preservation was a feature of this development from the very start and with the increasing use of treated timber, it has assumed a proportionately important place, with the result that it was recently necessary to make extensive improvements in the facilities for this purpose and the plant now operated is a thoroughly modern one.

The timber in this area is very largely larch with lesser amounts of Rocky Mountain fir, western cedar, pine and spruce. It does not grow to very large size compared with the Pacific coast timber and the low percentage of pine has made it difficult for commercial concerns in this area to compete with those operating in more solid pine stands.

Larch and pine provide excellent tie timber having a fair life, even when untreated. The cedar is in great demand for poles and piling, and lodgepole pine, if treated, also provides first-class fence-post and pole material. The pine (other than lodgepole) and spruce are generally disposed of as commercial building lumber.

The development in this area was started in 1901 when the Somers Lumber Company was organized to construct and operate a small mill at Somers at the north end of Flathead lake. Its situation in relation to the timber lands and to the Great Northern is shown by the map. This location was selected because timber from a very large area was available by driving the logs down the Stillwater, Flathead and Swan rivers

A Typical Montana Lumbering Camp

into Flathead lake. A great deal of lumber was also directly tributary to Flathead lake and could readily be put into the lake and towed in booms to the mill at Somers.

In order to insure an adequate tie supply, the Great Northern purchased an interest in the Somers Lumber Company and in 1906 became the principal owner. The railway had established a timber treating plant at Somers in 1901, this being one of the earliest plants of its kind in the Northwest. The plant was designed to treat ties by the zinc chloride process. It had four cylinders 6 ft. by 113 ft., equipped with 24-in. gage tracks. It was operated directly by the railway company and independently of the Somers Lumber Company and between 1901 and 1926 this tie plant treated 17,410,000 ties with zinc chloride.

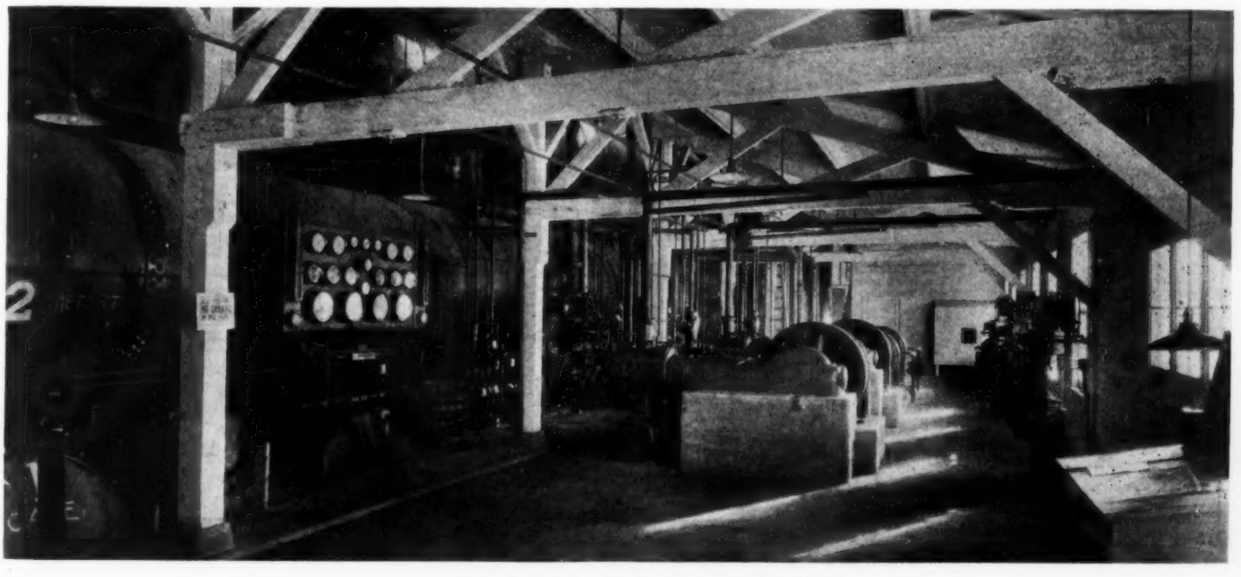
Larger Timber Tract Purchased in 1925

The Somers Lumber Company plant had been installed and operated on the theory that its life would be somewhat limited, but the purchase of a large tract of timber in 1925 gave reasonable assurance that the mill would have sufficient timber to operate indefinitely. As a consequence, a program for modernizing its plant was undertaken by the lumber company in 1926, while the railway set out at the same time to rebuild the treating plant, which was then 25 years old and out of date. Until 1926, three separate steam plants were operated, one at the lumber company's saw mill and another at the planing mill, while an independent steam plant at the tie plant furnished the steam for its operation. In carrying out the reconstruction, these three plants were replaced by an up-to-date boiler plant, forming a part of the improvements at the saw mill. It comprises two 750-hp. Stirling boilers, fired exclusively by waste material from the saw mill and planing mill. These boilers supply steam to the main engine and other auxiliary equipment at the saw mill, and also to the tie plant through a pipe line over 3,000 ft. long, carrying 125-lb. pressure. Exhaust steam from the engines at the saw mill is used in mixed-flow turbines to generate all of the power required to run the planing mill and tie treating plant and to furnish light and water supply for the plants as well as the town of Somers.

Tracks All Standard Gage

About half of the ties treated at the plant are furnished by the Somers Lumber Company, the remainder being purchased by the railway along the right-of-way or from other mills and shipped to the treating plant. All tracks are standard gage so that ties coming in for seasoning can be spotted in the proper location, whether they are shipped in railway cars or are delivered to the plant in the small cars which are used for moving ties from the saw mill to the tie plant.

Since steam and electric power are delivered to the tie treating plant by the lumber company, there is little fire risk and the locomotive used in hauling trains of retort cars to and from the plant is a fireless steam locomotive, which also receives its charge from the high-



An Interior View of Part of the Treating Plant

The Fireless Steam Locomotive

pressure line referred to above. This locomotive is a 16-ton, 4-wheel, H. K. Porter Company product. The locomotive is charged at a pressure of about 125 lb., a reducing valve furnishing steam to the cylinders at 25 lb.

A Modern Treating Plant

The plan for the improvement of the tie treating plant involved the substitution of new 8-ft. by 122-ft. retorts with standard-gage tracks for the old small cylinder and a battery of motor-driven air compressors for the old direct-acting pumps. The plant was designed and installed under the supervision of Grant B. Shipley, consulting engineer, Pittsburgh, Pa.

Over each 8-ft. by 122-ft. main cylinder there is a 6-ft. by 118-ft. Rueping cylinder, the latter being an old treating cylinder. The scale tanks beneath the main cylinders are 7 ft. by 35 ft., the weighing beam being directly under the instrument board.

Two working tanks, one for each of the treating units, are located inside the plant to the rear of the treating cylinders. These tanks have a capacity of 52,000 gal. each and were placed within the building to conserve heat. Three high-pressure air cylinders, 5 ft. by 35 ft. each, stand just outside the plant to the rear. Three of the old cylinders were left in place—two being used as supplementary vacuum tanks and one as a blow-back cylinder. Located in the same building with the retorts is a tank-car room for unloading tank cars, where two cars of oil may be unloaded at the same time into two receiving tanks, 7 ft. by 55 ft., located beneath this room. Just north of the plant are three storage tanks, each having a capacity of 154,000 gal., into which the oil is pumped from the receiving tanks.

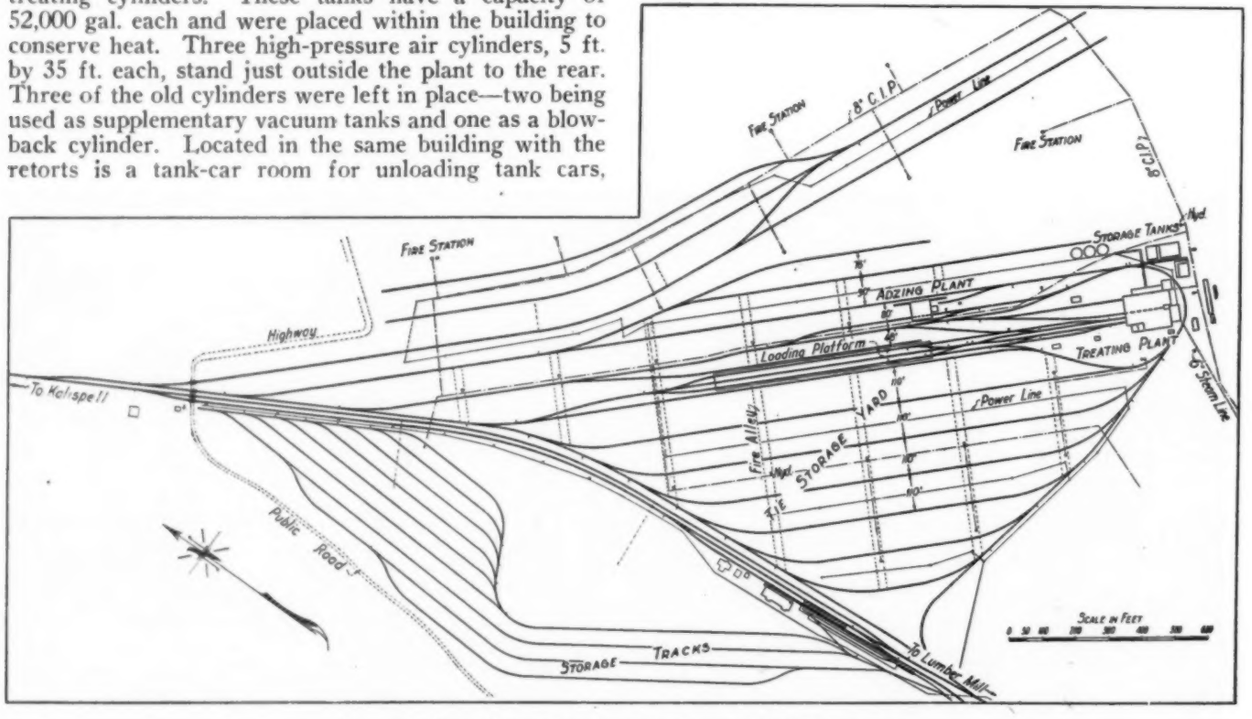
All Operations Handled by Air Pressure

The engine room is equipped with machinery and recording instruments of the latest type. The machinery consists of two Ingersoll-Rand compound air compressors and two vacuum pumps of the same make. The compressors are of the Imperial XRE type with one 5-in. by 12-in. cylinder and one 10½-in. by 12-in. cylinder. The vacuum pumps are of the ER1 class with a 22-in. by 8-in. cylinder. These compressors and pumps are operated by direct-connected synchronous motors. All operations, such as the generation of cylinder pressures, the shifting of oils and zinc chloride solutions from storage tanks to working tanks and treating cylinders are done by air pressure, no pumps being used.

All ties received at the plant are separated as to grades and kinds and piled in accordance with the respective grades. The piling of sawed ties is done largely by electrically-operated mechanical pilers.

All Ties are Incised

While it had been the practice to incise all ties cut at the saw mill before air seasoning, the plan for the improvement of the tie plant included the construction of an up-to-date incising and boring plant which was placed in service early in 1928. Even with this plant in service the practice of incising ties at the saw mill has been continued on the theory that it assists in reducing the checking during seasoning, and all ties are incised at the adzing and boring mill before treatment whether they have been incised previously or not. All ties are



General Plan of the Treating Plant and Yard at Somers

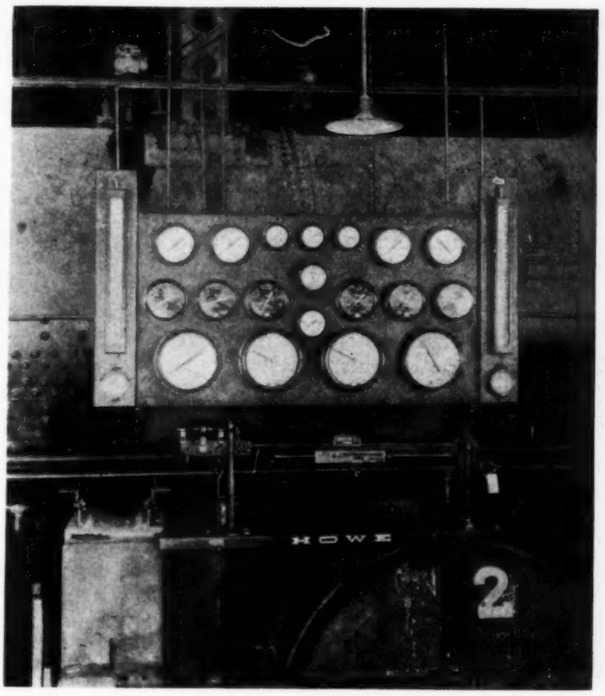
bored, but adzing is done only on hewed ties received from the right-of-way. Dating nails are also inserted in the ties while they pass through the adzing, boring and incising plant.

Bridge ties and timbers are incised at this plant before being treated. A framing mill is provided for framing all telephone and telegraph poles as well as bridge timbers before they are treated. The large quantities of ties, timbers, poles, piling, posts, etc., are stored in arranged piles in the seasoning yard for six months to a year before being treated. This yard has a storage capacity of 1,000,000 crossties, 50,000 switch ties and 20,000 to 30,000 pieces of piling and poles; in addition to about 2,000,000 ft. b. m. of miscellaneous timbers. The output of the treating plant is approximately 4,00,000 cu. ft. per year, the actual amount in 1928 being 4,137,964 cu. ft.

Treat a Million Ties Annually

Over one million crossties are treated annually, of which about 60 per cent are treated with 0.5 lb. of zinc chloride per cu. ft. and 40 per cent with 7 lb. per cu. ft. of a 50-50 mixture of creosote and crude oil. The zinc chloride is injected by the Burnett process with a 15-min. initial vacuum and a 45-min. final vacuum. The pressure used in this process is 185 lb. with an average temperature of 180 deg. F. The Lowry process is used for oil-treated ties. No initial vacuum is used in this treatment, but a 30-min. final vacuum is employed. The average pressure is 170 lb. and the temperature is 190 deg. F.

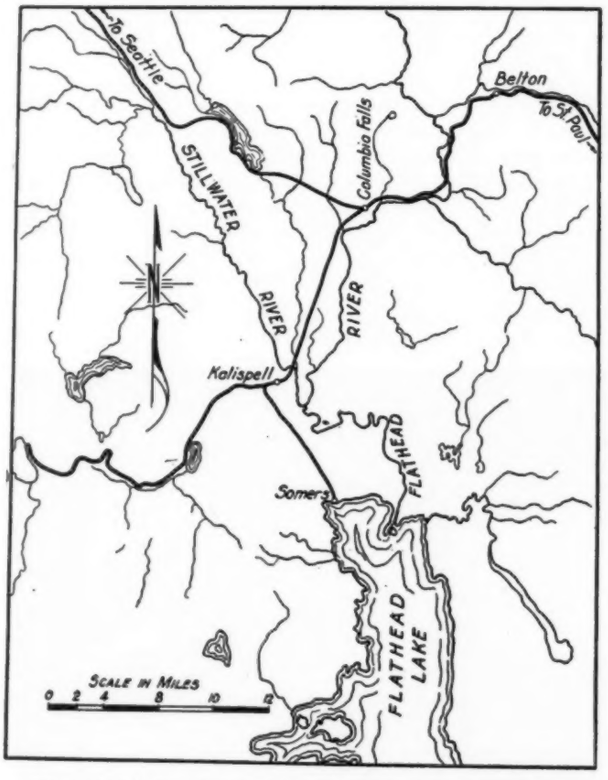
Bridge timbers and piling are treated with a mixture of 75 per cent creosote and 25 per cent crude oil with 9-lb. absorption per cu. ft. of timber. Some telegraph poles have been treated with ½-lb. of zinc chloride per cu. ft., but most of the poles and posts now being shipped are lodgepole pine treated with a creosote and crude oil mixture. All bridge timbers treated are of Douglas fir from the Pacific coast region and the piling treated is of Rocky mountain Douglas fir.



The Control Board and Scales

Piling, poles and timbers which are not thoroughly air seasoned, are treated by the Boulton process; that is, the timber is boiled under a vacuum at a low temperature and the moisture content removed from the timber before it is subjected to pressure.

The combination of the tie and lumber producing plant with the tie and timber treating plant has resulted in providing practically continuous operation for the saw mill, and the production of steam and power for use at the tie plant from the waste products of the saw mill has given an unusually economical timber preservation plant to the railway. W. R. Ballord, general manager of the Somers Lumber Company, is in charge of both the mill and treating plant, with A. J. Robinson in direct charge of the treating plant. We are indebted for the above information to D. J. Kerr, assistant to vice-president, Great Northern.



Map of the Territory Tributary to the Somers Plants

A NEW SUBURBAN LINE, 5¼ miles long, connecting Wimbledon and Sutton, was opened for traffic by the Southern Railway of Great Britain on January 5. Eight-car trains, accommodating 112 first-class and 540 third-class passengers, will be operated over the new line between Holborn Viaduct and West Croydon, at intervals of 20 minutes during business hours and every half-hour at other times. Passengers may connect at Sutton with trains to and from Victoria station (London) and at Wimbledon with services to and from Waterloo station (London). Construction of the new line, begun in October, 1927, involved the excavation of over 500,000 tons of earth, and the building of 24 bridges and six stations. There are no grade crossings. Operation is electrical throughout, on the direct current third-rail system, now the standard for the Southern.

The Elimination of Derails

SOME 38 years ago one of the railroad commissioners of Illinois made a special study of the use of derails at interlocking plants, and, through his influence an act was passed by the legislature of that state on July 1, 1891, which authorized the commission to order the installation of such interlocking devices as in its judgment might be necessary to insure the safe operation of trains over railroad crossings at grade. This resulted in the commission requiring derails at such points. Gradually this practice spread through adjoining states until nine other midwestern states, Iowa, Indiana, Ohio, Missouri, Wisconsin, Nebraska, Michigan, Minnesota and North Dakota, passed laws or adopted rules embodying this requirement, while seven other states, Georgia, Texas, California, Idaho, Montana, Oregon and Washington later adopted rules or regulations that, in the majority of cases, resulted in the requirement of derails. In the eastern part of the country, such legislation has not been enacted, nor have the railroad commissioners of these states exercised any jurisdiction in this respect. The same attitude prevails in the southeast, excepting Georgia where the railroads are at liberty to exercise their own judgment as to the use of derails, and as a result, few have been installed.

After an extended investigation of the subject, the Signal Section of the American Railway Association, in 1924, approved a report opposing the use of derails in main tracks. An explanatory paragraph in this report concluded with the statement that, "it is illogical to install a device to prevent an accident by causing another which may be worse." This action crystallized the growing opposition to derails on the part of railroad officers, and caused many of the state commissioners to change their attitude. Since that time, many derails have been removed and few new ones have been installed, except where specifically required by state authorities.

In Wisconsin, for example, derails are mandatory where the lines of two different railroads cross, but they are not now required at crossings of two lines of one road. In other states formerly requiring derails, the railroad commissioners have, in certain cases, approved plans for interlocking without derails at railroad crossings. In 1926, for example, a large plant with no derails in the main tracks was installed in a crossing of three railways at Walbridge, Ohio, over which 200 and sometimes as many as 300 trains pass daily. Derails have also been removed from old plants or omitted at new plants on such roads as the Baltimore & Ohio, the Norfolk & Western, the Erie, the Michigan Central and the Pennsylvania.

Further evidence that railroad officers, as well as many railway commissioners, no longer believe that derails are desirable, is afforded by the action taken with reference to the installation of automatic interlocking plants, where automatic signal protection at railroad crossings is controlled by the approach or presence of trains on the track circuits, with the control circuits so interlocked electrically that proceed signals for opposing routes cannot be displayed simultaneously. Although developed only about 10 years ago, over 200 such plants have already been installed without derails in 28 different states, including all of the 10 midwestern states which were the first to require derails at interlockings. However, smashboards are required in lieu of derails in Minnesota, North Dakota, Indiana and Texas. In Ohio some plants have been approved without derails or smashboards, while they have been required at others and at least at one point, Liberty Center, Ohio, derails have been required, this being the first plant of this type to be so equipped.

On a railroad extending from New York to Chicago no derails are required until the line enters Ohio, while in Indiana derails are required at regular plants and smashboards at automatic layouts, and in Illinois derails are required at regular plants, although neither derails or smashboards are required at automatic layouts. A railroad extending from Chicago to San Francisco is practically free to follow its own judgment on its lines through Kansas, Arkansas, Oklahoma, Colorado, Nevada, Arizona and New Mexico, but in Illinois, Missouri and California, it must provide derails at regular interlockings, although it is not required to do so at automatic plants.

The methods of operating trains are practically the same throughout the United States, large systems traversing as many as 10 states. Why then should there be variations in different states as to the use of derails at railroad crossings any more than in automatic train control or other railroad safety devices? The American Railway Association has adopted a recommendation that derails should not be used in main tracks. With this evidence of unified opinion, the railroads are in a position to request approval of plans for proposed plants without derails. The task is not hopeless. Even in Illinois, where derails were first required, the law itself does not specifically require them and the Railroad and Warehouse Commission adopted a general order which was approved by the State Public Utilities Commission on January 1, 1914, under which the railroad commission may permit the ommission of derails, where in its judgment conditions justify. Certainly the opportunity is at hand and the evidence is available to support the railroads in making an effective plea for the elimination of derails at new plants or their removal at old ones, wherever they believe that such devices are unnecessary.

PASSENGERS FOR NIGHT TRAINS departing from the Anhalt station, in Berlin (Germany), who arrive at the station without having secured sleeping car berths in advance, can literally choose their own from a recently erected illuminated sign which gives the destination and leaving time of the various trains, as well as the berths still available in each. If the experiment proves popular, it will be extended to other important stations by the German Railroad Company and the Mitropa, the German equivalent of the Pullman Company.

* * *

Atlantic Coast Line Photo.
Atlantic Coast Line Station at Fort Myers, Fla.

A Scheduled Freight Train Leaving the Pennsylvania Yards at Terre Haute, Ind.

Manufacturers and Steel Producers Testify to Improved Service*

An automobile accessory concern has reduced inventory 38 per cent with net sales increased 250 per cent since 1922

Part II

REDUCTIONS of operating expenses due to their ability to schedule their operations better and stabilize their labor forces are among the benefits attributed by manufacturers to the improvements in railway freight service which have been made within recent years. Among the other benefits emphasized in the letters received by the *Railway Age* from business leaders throughout the country, and quoted herewith, are not only reduction of inventories, but also savings made by shipping by freight instead of express because of the increased speed and dependability of freight service; avoidance of increased freight rates because of operating economies effected by the railways; practical elimination by shippers of the tracing of their freight because the betterment of freight service has made it unnecessary, and reductions in claims for loss and damage of freight.

Letters received from manufacturers of miscellaneous commercial products and heavy machinery and operators of steel mills contained information as follows:

D. H. Kelly, *vice-president, Electric Auto-Lite Company,* (lighting and ignition systems for automobiles), Toledo, Ohio.—The average train speed of 11 of the major roads in miles per hour in 1929 will average 12.9, as against an average of 6.4 in 1923. This improvement has enabled us, with of course many other things which we have done, to reduce our inventory approximately 38 per cent below that in 1923, with an increase in net sales of approximately 250 per cent. The dependability of present railway service is a big factor in keeping our inventory at a low figure.

Francis B. Davis, *president, United States Rubber Company,* New York.—Unquestionably the transportation agencies of the country are giving more efficient and reliable service than ever before in their history. The direct effect on this company has been quite apparent, and has saved us many thousands of dollars, not only in reduced inventories, but in interest charges.

The through package car service now operated by the carriers from the larger cities and transfer stations to distant destinations on prearranged schedules, makes it possible for shippers to determine definitely when their shipments will reach destination, resulting in quick turnover of merchandise.

L. H. Ley, *traffic manager, Kelly-Springfield Tire Company,* Cumberland, Md.—It is interesting to note the decided improvement in service and the resultant reduced time in transit which has had the effect of plac-

* Part I of this series of articles on the advantages that business has received from improved railway service appeared in *Railway Age* of January 11, page 153.

ing transportation service on a dependable basis so that schedules can be respected, thereby enabling the public to gauge their stocks on hand and to be in a position to place orders for material, which, in most cases, will arrive as per schedule.

To best illustrate this improvement in transportation is to refer to 60 distributing centers, the principal cities in the United States. These include almost every state in the Union, and from Cumberland to these 60 cities the average time in transit is now but four days.

A survey of our claim record reveals that each year brings a decided reduction in the amount of claims filed despite the greater number of shipments forwarded. In 1928 claims totalled about 23 per cent of the claims filed and paid by the carriers to our company in 1922.

John J. Watson, *president, International Agricultural Corporation* (commercial fertilizers), New York.—We have found a great improvement in railroad shipping facilities since 1922. This has been especially noticeable in the service that the railroads have rendered to the fertilizer companies during the short concentrated shipping season each spring, and generally in other lines the reliance which we can place on deliveries has enabled us, in manufacturing, to carry much smaller inventories. This will prove of inestimable value to the country at the present time, if the decline in security values has the effect which many of us think it will have on the buying power of the people.

Blaine S. Smith, *president, Pennsylvania-Dixie Cement Corporation,* New York..—The improvement in all phases of railway transportation during the past few years has been of material benefit to this corporation. The dependable and expedited service which has been given to our business has been of particular benefit in enabling us to carry smaller quantities of inbound materials and supplies, thereby reducing inventories. Car supply for outgoing business has been ample to meet all demands. Also, there has been a better and more intimate relationship established between the representatives of industry and the railroads, resulting in a spirit of cooperation and helpfulness that has produced the present satisfactory conditions.

Leland Lyon, *president, Atlas Powder Company,* Wilmington, Del.—In our business it has been possible to reduce considerably inventories in practically all commodities and in one particular instance where a few years ago we carried approximately a 60-day supply, this has now been reduced to approximately 20 days.

G. A. Sculley, *traffic manager, Endicott Johnson Corporation* (shoes), Endicott, N. Y.—It is an undeniable fact that our business has been materially benefited by improved railway service, during the past five or six years, and while the results are not all tangible, nevertheless, they are reflected in the widening of our markets due to improved service to customers, and also in interest savings on reduced inventories. However, it is greatly regretted that during the same period the carriers of the United States seem to have adopted the policy of constantly seeking to make changes in rates of long standing, and upon which commerce and industry have been built up after the expenditure of millions of dollars. These constant proposed changes in rates have resulted in a great deal of apprehension upon the part of many industries that the rate adjustments upon which they have been built and grown may at any time be wiped out, and their business placed in great jeopardy.

F. C. Rand, *president, International Shoe Company,* St. Louis, Mo.—During the past six years there has been a marked improvement in railroad service; for it can now be relied upon with a fair degree of accuracy as to delivery dates. This largely eliminates uncertainty, which is one of the most costly factors in industry. Four day freight service between New York, Boston, Philadelphia and St. Louis is a reduction of nearly 50 per cent in time as compared with six to ten years ago; and the quicker delivery from these eastern terminals naturally reduces the time from contiguous territory.

With a few exceptions we are now helped by one-day service on the movement of supplies between St. Louis and our manufacturing plants in Missouri, Illinois and Kentucky. This dependable freight service from the east to St. Louis and from St. Louis to our manufacturing plants enables our supply department to reduce substantially the amount of supplies and materials in transit and on hand; and helps further to reduce the necessity of express shipments.

The package car system has done much to improve the service from St. Louis throughout its trade territory, for these cars are operated daily and maintain a fairly uniform schedule. During the past few years this package car schedule has been reduced, so that St. Louis now has six days service to Los Angeles, Sacramento and San Francisco; three days to Fort Worth and Dallas; four days to Laredo and El Paso, Texas; two days to Jackson, Miss., New Orleans and Atlanta, and three days to Jacksonville. Because of this service merchants in those territories can safely carry less merchandise in stock, and, compared to some years ago, do not have to resort so often to express shipments.

In addition to the concrete improvements effected by the railroads, we feel that they are going far toward building up good-will between themselves and their shippers, because of the fine courtesy that is evidenced today as contrasted with some years ago, and the greater consideration given to public interest.

C. H. L. Flinterman, *president, Wilcox-Rich Corporation* (valves, forged parts for internal combustion engines, and tools) Detroit, Mich.—Due to improvements in railroad transportation we find, in common with other manufacturers, that we are able to get along with a much smaller inventory than was formerly necessary. Last year, through reduced inventories at our various plants, we showed an average turn-over of 14 times as against the usual seven or eight.

In the old days, it was necessary, in order to be sure of an ample supply of material, to allow three weeks' time for the transit of steel from the mills to our plants. Now one week is more than ample.

Another thing which is very noticeable is the almost entire absence of transit delays due to defective cars. Such things as a car being put off on a siding on account of a draw-bar being pulled out, or other defects, are practically unknown. At one time it was quite common for us to find defective cars indefinitely delayed on a siding, and in some cases it would be necessary to reload the material into other cars. The railroads in general have done a great job, and the officials deserve a tremendous amount of credit for what they have accomplished.

John A. Bush, *president, Brown Shoe Company,* St. Louis, Mo.—The decided improvement in railway transportation since 1922 has been a real benefit in keeping our factories up to a high production and has been the means of lowering our inventories to the extent of our making a sizeable saving in a given period. This better

freight transportation service has been the source of much satisfaction to us and our customers in the distribution of our products, in that we are now able to use freight facilities rather than express to a much greater extent than in former years, lowering, of course, the cost of shoes.

A textile manufacturer.—The increased efficiency in railroad operation has very materially lightened the burden of the retailer and the distributor. It has, however, increased the obligations of the manufacturer; the retailer and the distributor have benefited, and while the manufacturer has likewise benefited, it is a fact that the manufacturer must now arrange the location of his industry, the assembling of his raw material and the manufacture of his goods to serve the retailer and distributor, in co-operation with the increased efficiency of the carriers. We believe our greatest benefit has come from the stability of rates. The last major increase in rates was in 1920. In 1922 there was a 10 per cent horizontal reduction in rates. Since that time in this territory, at least, the level of rates has been very generally maintained, and we find the carriers with whom we do business consistently showing an improved financial condition, with practically the same level of rates, and only a normal increase in tonnage. To the manufacturing concern paying several million dollars per year transportation charges, the horizontal increases in transportation rates, which were met with under the old transportation methods, were a distinct burden, and we feel we have been relieved of the burden of an increase in rates by the increasing efficiency of operation.

H. H. Stahle, *traffic manager, Libbey-Owens Glass Company,* Toledo, Ohio.—We have been able, during recent years, to figure on lower stocks of raw materials, due to the excellent regularity of movements over the railroads; and, while we know we have saved considerable money and time, it would be an endless task to determine the amount of savings involved.

C. M. Adams, *assistant to sales manager, Bohn Aluminum & Brass Corporation,* Detroit, Mich.—Customers who depend upon us for supplies of bearings, pistons and other parts used in motor car manufacture are depending more and more on the efficient and regular deliveries due to the improved service of the railroad. A few years ago it was necessary for these manufacturers to carry excessive inventories, and in some cases they asked us to carry what they termed as "banks," which were really inventories of their material in our possession. Most of this has been done away with. The savings that might be attributed to improved service on this account would be tremendous, but, of course, we have no exact figures. The same remarks apply to raw material which we purchase and from which these parts are fabricated.

W. L. Geddes, *president, MacAndrews & Forbes Company* (box board and wall board), New York.—Due to the dependability of this improvement in service it has been unnecessary to "stock up" on materials and supplies. Today we can safely say that we will have a car from Chicago to Camden in five days and can also closely gauge less than carload shipments in a like manner. The service we have been, and are now, receiving, is reflected very favorably in the matter of demurrage accounts. Some of our commodities require special equipment and even such requirements are very ably handled. We have been able to move almost all orders the same day as received, which speaks for itself.

We are satisfied that the carriers are on the job and that our business is also their business. They certainly work hard to secure it and after having secured it, it is not too much trouble for them to look after it.

Howard Coonley, *president, Walworth Company* (tools), Boston.—There can be no doubt that the great improvement in efficiency of the railroads during the past six years has played a vital part in the progress of this country. Without it, the reduction in inventories and the quick turnover of finished materials would have been impossible.

It is undoubtedly true that the service has been of greater benefit to the consumer and the jobber than to the manufacturer, because it has been the consumer and jobber who have been able to reduce to a minimum their inventory investment and rely on the manufacturer to place the merchandise they need at its destination in time to satisfy the most urgent call of the user. Though the burden has been shifted, it has been on the whole much lightened, and the railroads deserve a great share of the credit.

One outstanding feature recognized by many is that improved service has assisted in keeping freight rates within a reasonable limit. The New England roads have recently shown not only a remarkable improvement in their service, but a full realization of their responsibility to that community.

Osborn Van Brunt, *general traffic manager, Certain-teed Products Corporation* (composition building materials), New York.—Conditions in our manufacturing plants do not make possible any material saving in inventories because of improved railroad service, but it has simplified materially the purchasing of materials. They do not have to be ordered in as large quantities or so far ahead of the time in which they are needed. There is no question but what the improved railroad service has simplified merchandising and put it on a healthier basis because there is less gambling on the future.

I think the particular way in which the traffic department benefits by the situation is that it has enabled us to practically do away with the tracing clerk. A few years ago that individual was an important member of the traffic department and was kept very busy expediting important shipments and tracing delayed shipments. We even sent men out on the road to "ride the cars." That sort of thing has been entirely dispensed with. It is a rare thing when we have to trace a car now.

The railroads have certainly made a splendid contribution to the prosperity of the country and should receive due credit for it.

P. W. Litchfield, *president, Goodyear Tire & Rubber Company,* Akron, Ohio.—The railroads have endeavored in every way possible to establish service which would meet the requirements of the shippers and receivers of freight and this service has enabled the shippers and receivers to figure on a regular schedule from point of origin to destinations. In our own case we are practically able to figure the schedule from any shipping point to Akron or from Akron to any destination and, eliminating accidents, the schedule will be maintained. The railroads of the country today are not only setting up schedules but are maintaining them with practically the same regularity as their passenger service. There is no question but what the present operation of the railroads has enabled concerns to carry less inventory than in the past.

M. D. Tucker, *vice-president, Evans Auto Loading Company* (automobile loading devices), Detroit, Mich.

—The service given by the railways has greatly improved since 1922, in two ways, especially, that the time of delivery by the carriers is shorter and at the same time more dependable than it was previous to that time.

A manufacturer of asbestos products.—Our experience has been, unquestionably, that railway service has improved in the last few years, and there is no doubt that this is a great help to our company, as well as to many others, in the saving of money formerly tied up in materials "in transit." We do not warehouse our materials, but usually ship direct to distributors and consumers, and reduced time in transit may, therefore, not be of such great importance to this company as to others. At the same time, generally improved railway service is of benefit to us in that prompt handling of our raw products into our factory, speeds up production, and, furthermore, shipments to our customers, promptly delivered in good condition, mean increased sales.

In the matter of rates, we are very liberal, and have not at any time assumed an antagonistic attitude toward the carriers. We believe that the railways must have reasonable rates in order to give a reasonable service.

Machinery Manufacturers

Manufacturers of heavy machinery provide some very definite evidence of the ways in which, aside from the decrease in stocks, the speeding up of freight service has aided the conduct of their business. Concerns of this class replied as follows:

H. S. Mitchell, *purchasing agent, National Acme Company* (screw and chucking machines, dies and taps), Cleveland, Ohio.—We have been able to very materially reduce the inventory which it was formerly necessary for us to carry. This is particularly true in connection with our raw material, shipments of which are made to us in carload quantities from the mill. The material consists principally of cold drawn steel bars, heading wire, and brass rods. In a great many cases we are able to transfer the material direct from the cars to the machines for fabrication, which of course saves storage and handling. We are finding the railway transportation service very reliable, both as to length of time on the road and also as to service at our terminal.

W. I. Ballentine, *vice-president, Advance-Rumely Company* (power-farming machinery), La Porte, Ind.—The improvement in railway transportation has unquestionably benefited our company. It is, however, difficult for us to measure definitely the benefits. Our business requires us to anticipate sales of different machines in different seasons and manufacture goods with the hope the demand will exist for them in their sales season. On this account our inventories are not as beneficially affected as they would be by improved facilities in other industries.

We have been able to bring commodities into our plants by freight where express would have been necessary without the improvement that has taken place in transportation in recent years, and we have been able to get our goods to their destination by freight in a time that is short compared with older railway operations. Both of these conditions unquestionably are a benefit, but as stated above, it is difficult to weigh them accurately.

Otto H. Falk, *president, Allis-Chalmers Manufacturing Company* (machinery), Milwaukee, Wis.—While we are not in the merchandising business in the generally accepted understanding of the term, except perhaps in our tractor division, nevertheless we have benefited directly by this change in operations of the carriers.

Under date of November 24, 1928, we carried a stock of 11,458 tons of coal on the ground at our West Allis Works; and under date of November 2, 1929, we carried only 7,324 tons. Today we feel reasonably safe in that the cariers are in a position to render the necessary service and that there would be no danger of a shutdown for a lack of coal.

In previous years we found it necessary to maintain branch houses with a considerable number of tractors in stock at these various points. Today, except for consumption in the immediate vicinity of these branches, we do not carry a stock, knowing that the carriers offer excellent service, not only being in a position to furnish equipment at all times, but to expedite movement after loads are tendered to them, and it is only a matter of a few days in either of the Southwestern or Northwestern territories between the dates of receipt of orders and the time when deliveries can be effected.

In the heavy machinery business the one outstanding necessity is suitable equipment for the ever-increasing loads and sizes of machines. This has reference particularly to transformers, which require depressed bottom cars, as the dimensions of the transformers themselves are such as to require the very maximum clearance in both width and height. To this end we have had the fullest co-operation of the carriers in building specially constructed cars to handle this type of machinery, making it possible to build in our plant considerably larger machines than heretofore, without the expensive operation of dismantling and reassembling in the field where the facilities are inadequate. The same situation applies as regards the building of heavier capacity cars, and again the carriers have seen the advisability of acquiring this class of equipment, and have assisted us materially.

In our West Allis Works there are approximately 17 miles of track, and several years ago the condition of these tracks was not at all satisfactory to ourselves or to the carriers. However, recently our tracks have been placed in first-class condition and the result is a considerable saving of operating expense, not only to ourselves but to the carriers. The maintenance of these 17 miles of tracks is the duty of the local carriers.

Another feature of the electrical end of our business particularly is that very frequently most expeditious deliveries are required either because a power plant is out of commission or a power company has obtained contracts and guarantees to give power on a certain date. Only recently it has been our experience in several instances that we have been able to depend on the carriers for the very minimum time for such machinery enroute.

L. J. Belnap, *president, Worthington Pump and Machinery Corporation,* New York.—The improvement in rail transportation in the past few years has contributed much in the reduction of costs to industry. It has made it possible to reduce inventories of raw materials and finished products and maintain manufacturing schedules because of the possibility of more accurately forecasting the time of goods in transit and consequent delivery.

Improved fast freight service has reduced the necessity of making many expensive express shipments. Prior to the improvement in rail transportation service it was frequently necessary to confine purchases of materials to sources nearest the point of consumption because of indefinite delays in transportation.

There, apparently, has been much improvement on the part of the transportation companies in the handling of lading, as there are fewer complaints of damaged goods

received. Working capital formerly necessary in the conduct of the busines of this corporation has been considerably reduced through improved transportation.

W. S. Hovey, *president, Fairbanks, Morse & Co.,* Chicago.—In the last six or seven years the railroads have made a marked improvement in the service which they have given us. This improved service has been a factor in permitting us to operate on a more economical basis. As a result of this better service our factories carry lower inventories, and one of the outstanding commodities that we have in our stocks is coal. Several years ago we were obliged to maintain a big investment in this item because the time in transit from coal fields in Southern Illinois was very irregular, requiring from six to fourteen days, as compared with today's dependable service of three or four days. This permits our factories to place orders without providing for a large reserve supply, as was necessary in the past.

Another illustration of our experience is the fact that in the past the railroads required seven or eight days for handling cars between two of our factories, while today between these same two points we obtain second morning delivery. This has made it possible for us to produce certain items at one of our factories for consumption at another, whereas under the old service this arrangement was not possible.

There has also been a marked improvement in the handling of manufactured products from our factories, not only to our branches, but also on shipments made direct to our customers. On carloads from our Beloit factory to the Pacific Coast we are making today seventh morning delivery, as compared with twelfth morning delivery; to New York, fifth morning delivery as compared with eighth or ninth morning delivery; to New Orleans, fourth and fifth morning delivery, as compared with ninth morning delivery. This excellent service permits us to keep our inventory of finished product at the factories and branches at a lower point than we did several years ago.

William W. Coleman, *president, Bucyrus-Erie Company* (excavating machinery, pile drivers), South Milwaukee, Wis.—There is absolutely no question that railway transportation service has very greatly improved within the last few years and the improvement is of real value to our customers as well as to ourselves.

Shipments do not require such intensive tracing as before but come through in much shorter time, and many express shipments are avoided because of the better service. It was not unusual several years ago to have several men personally following freight shipments, in order to avoid the shipments being held at division points, and frequently being set out on some side track for repairs to the rolling stock. It required the entire time of one man to follow shipments through the Chicago district with little or no time left for following up the venders. Now one man follows up the shippers and traces both inbound and outbound shipments. Many of our customers requested that their shipments be traced through to destination in order to avoid delays, which was a great expense to them.

Another service which means a great deal is that the information from the traffic departments is much more reliable and prompt. It was not at all unusual to trace shipments by wire without hearing anything for days and frequently shipments came through before there was any word from the tracers. This information is much more reliable and quicker now.

Equipment has been very much improved and shipments go through without being shunted on to some side track for repairs to rolling stock, frequently requiring a week before the equipment is again in order and moving. Customers now seldom order extremely heavy shipments by express as with the better and surer facilities for tracing, the risk of long delays does not exist.

John J. DeLaney, *traffic manager, American-La France and Foamite Industries, Inc.* (trucks, fire fighting apparatus and extinguishers), Elmira, N. Y.—This company has benefited greatly by the increased efficiency of the railways which have in turn kept pace with the increased efficiency in manufacturing. In other words, time is as great an element today with the railroad as it is in manufacturing costs.

In a manufacturing plant direct handling and elimination of circuitous movements through the factory is a time element which is of importance to them and which ties up very strongly with the time element of transporta-

Improved Car Reporting Methods in Such Offices as that of the Superintendent of Transportation of the Rock Island Have Enabled Manufacturers to Eliminate Car Tracing Forces

tion by the common carrier. Increased efficiency of the carriers has enabled the average industry to eliminate inventories in excess of current requirements and by so doing, naturally has not only decreased inventory but has also meant the elimination of waste in handling excess inventory.

The large storage of raw products such as steel, coal and many other items requires a considerable area and considerable rehandling in order to build up a surplus stock. Whenever material is stored on account of possible disruption of transportation, it invariably requires one or two extra handlings of such material and if the storage is of any considerable size, it sometimes requires trucking for considerable distances from the point of delivery on a siding to the storage place, and then in turn handling back to the particular place where it is consumed.

I would say that due to not only the carrier but the more efficient method of handling in industry that the country has saved a great many thousands of dollars. This company, I am sure, although we have no definite figures, has saved a great many thousand dollars due to quicker transportation.

Another factor which enters into this is the question of delivery of material at destination. In the old days, on short time contracts and uncertain transportation, a great deal of overtime and extra effort was put on orders to get them out in anticipation of the contract's "due date" at destination, which extra cost has been eliminated considerably by the more certain transportation facilities available at the present time.

Both the carriers and industries have today speeded up the matter of transportation not only via the rail carriers but within the industries themselves. These two things have developed together and have saved untold millions of dollars to the people of the United States.

Iron and Steel Industries

An excellent cross-section of the effect of improved railway service on the iron and steel industry is obtained from the replies from companies in that field. Among them are the following:

George E. Scott, *president, American Steel Foundries,* Chicago.—The benefits have been derived principally through:

1. Reductions—averaging 15 per cent per annum—in maintenance of material, stocks, and the consequent release of capital for other purposes and for income.
2. Better control of our yard operations and through that elimination of car detention and car demurrage charges.
3. Reduction in yard clerical forces.
4. Adequate car supply, faster running time, pooling of switch movements and terminal facilities, which have contributed to regular deliveries that to a large extent have met the requirements of our customers, and, in some instances have prompted repeat orders.

I believe it proper to state that the improved service which has been obtained from the railroads during the period referred to has had an economic value to us that would represent a very large figure.

M. C. Richards, *traffic manager, Spang, Chalfant & Co.* (steel tubular products), Pittsburgh, Pa.—Present day transportation eliminates the necessity of anticipating operating requirements months in advance, so that unfinished materials such as plate steel and fuel do not have to be held in stock, but can be secured in a few days from the source of supply. This condition permits a saving by reduced inventory, and also contributes considerable saving in demurrage that may be avoided by the possibility of regulating the flow of inbound material so so that it can be handled promptly from the car to the furnace where it is manufactured into pipe. An adequate supply of suitable empty equipment, now maintained by the carriers, makes it possible to load directly from production to the car, thus saving the expense of handling through stock. Regular mill operation, made possible by this efficient transportation, reduces the labor turnover to a minimum, enabling us to maintain an experienced organization which contributes to reduced expenses.

George M. Verity, *president, American Rolling Mill Company,* Middletown, Ohio.—There is no question but what the speeding up of railway service, its improved equipment and greatly improved deliveries, has had a very marked effect on the whole industrial situation. We have a good many customers whom we know use material direct from cars and carry very little, if any, stock. There has unquestionably been a reduction and a consequent lightening in the investment load which every industry must carry; in fact, the only criticism of the whole situation that we would have would be that a great many fabricators are depending too largely upon the ability of the producer to manufacture and ship promptly and on the railroad to deliver immediately, and not endeavor to carry any part of the burden themselves. Unquestionably the railroad situation in general, as it is working today, certainly shows that it is doing its part in speeding up industry and in lessening costs.

J. A. Campbell, *president, Youngstown Sheet and Tube* Company, Youngstown, Ohio.—We have 75 warehouses throughout the country where the Continental Supply Company carries a stock of pipe for the drilling of oil, etc., and I am quite sure that in all these warehouses we are not obliged to carry as large an inventory as heretofore on account of the improved service. The automobile industry carries very small inventories and gives us about three days to get the material to Detroit. All of our other products have had ample accommodations from the railroads, and such a thing as being short of cars, which happened prior to the war, I have not heard of since the war.

In order to be in a position to render prompt service regardless of contingencies that might arise to interfere with our supply of raw materials, it is necessary for us to protect ourselves by carrying stocks sufficient to tide us over in case of emergencies that we may encounter due to causes, other than railroad service. However, in view of the improvement in transportation service, we now only have to carry about three days supply of coal whereas formerly we had to carry six days supply. There are some advantages, of course, on other raw materials but not to the same extent as on coal.

Notwithstanding the improvement that has been made by the carriers, we are required to be in a position at all times to make prompt deliveries and protect ourselves against any emergencies that might interfere with operations. It is our understanding that the fabricator does not carry large stocks due to the fact that he depends on the producer and the carrier. He is able, therefore, to realize on this efficient transportation service to perhaps a greater extent than producers.

(Letters from oil and mining companies, manufacturers and distributors of dairy and meat products and a number of miscellaneous products, will be presented in Part III, the final part of this series of articles on the benefits that have accrued to industry from improved railway service, in *Railway Age* of January 25.—(EDITOR.)

Low Rates Offered to Stimulate Holiday Travel

Effect of western railroads' reductions uncertain—
Christmas rail business exceeds last year's

WESTERN railroads, during the Christmas holidays, made an earnest endeavor to stimulate travel through such innovations as the establishment of special low fares, a campaign for "tickets for gifts," etc. In an effort to stimulate travel to the Pacific Coast, the railroads, on December 16, reduced the rates from all the principal main-line points in the middle west. The round trip fare from Chicago to California over the Atchison, Topeka & Santa Fe, the Chicago, Rock Island & Pacific-Southern Pacific, the Chicago, Milwaukee, St. Paul & Pacific-Union Pacific, and the Chicago & North Western-Union Pacific was made one and one-third the regular fare, a cut from $143.78 to $106.45, effective on December 16 to 28, with a return limit of January 12, and was good on all trains including extra-fare trains.

Another reduction in railroad fares was offered the public when the Chicago, Milwaukee, St. Paul & Pacific, the Chicago, Burlington & Quincy-Northern Pacific, the Chicago & North Western-Union Pacific, and the Chicago, Burlington & Quincy-Great Northern cut the round trip fare one-third between Chicago and the Northwest Pacific coast, or a cut from $154.42 to $102.95. These low fares were on sale from December 16 to 28, with a return limit of January 12. Passengers for the south were also able to take advantage of low fares. The Illinois Central, among other roads, reduced the round-trip fare from Chicago to the Gulf one-third, the tickets being on sale from December 21 to 24, with a return limit of January 6.

Reductions in Local Fares

These fare reductions were by no means confined to long-distance travel, for many roads offered a special low rate between less distant points. In addition to the roads mentioned above, low holiday rates were offered by the Wabash, the Chicago & Alton, the Chicago Great Western, the Missouri Pacific, the Chicago & Eastern Illinois, the Texas & Pacific, the St. Louis-San Francisco, and the Minneapolis & St. Louis. To some points, the tickets were on sale for several days, while to others the reduction was in the form of one-day excursion. The Kansas City Southern operated an excursion from Kansas City to Fort Smith and intermediate points on December 14. The roads operating between Chicago and St. Louis offered a round trip rate of $13.88, good until January 6, to those who were desirous of leaving on December 21 to 23. Those who were able to depart between December 24 and 31 and who did not wish to stay longer than 15 days made a further saving, the round trip fare being $12. Other "bargains" included the $6 week-end excursions of the Erie on December 14 from Chicago to Columbus, Ohio; that of the Cleveland, Cincinnati, Chicago & St. Louis from Chicago to Cincinnati on the same day; and that of the Pennsylvania from Chicago to the same point on December 28.

Canadian roads also offered "travel bargains." During December and up to January 5, low fares, permitting a return of three months, were in effect.

The reductions of the steam railroads were followed by cuts by other forms of transportation. The Chicago, North Shore & Milwaukee, an electric line, cut its fares between Chicago and Milwaukee one-third. The Greyhound Lines, which operate motor coaches, also placed low rates in effect between Chicago and points south. The one-way fare to Miami was $35, while the round trip was only $61.20; the one-way fare to Los Angeles was $50 and the round trip $90; and the single fare to New Orleans, $21.35 and the round trip $38.45.

Effects of Low Rates Uncertain

The contradictory nature of the figures covering ticket sales on the various railroads at Chicago and the heavy snow fall which made the highways useless are factors which prevent a definite conclusion as to the effect of reduced rates. All railroads, those having reduced rates and those whose rates were unchanged, reported a substantial increase in the number of tickets sold in Chicago during the holidays this year as compared with last year. However, one road, operating east from Chicago and not a party to the low tariffs, reported an increase in Chicago ticket sales of 50 per cent, while the sales on another eastern line, a line that is comparable, increased only 5.9 per cent. In contrast, a railroad running west of Chicago and a party to the low rates, experienced a 25 per cent increase in Chicago sales, while the maximum increase reported by any of the lines operating from Chicago and a party to the low rates, was 41 per cent.

Any conclusion as to the effect of the low rates must take into account the weather conditions that prevailed during the period in which the low rates were in effect. Chicago and a small area around Chicago experienced a snow fall of 14.8 in., the second largest precipitation in Chicago's history, and the highways were rendered impassable. As a result, many people who would otherwise have used private automobiles and many persons who would have used motor coaches were compelled to travel by rail.

There is another factor which might have distorted the volume of ticket sales at Chicago. Owing to the fact that the eastern lines were not parties to the low rates many people traveling west via an eastern road but with destinations on western lines paid the fare to Chicago and took advantage of the reduced fare beyond. Normally, these passengers would purchase a through ticket at the point of origin.

The effect of reduced rates can be determined only by a comparison of the revenue derived by all lines involved, but this cannot be accomplished for several months. However, it is evident that losses were incurred in handling certain classes of passenger movements. Among these were the student vacationists and

football and basketball parties traveling to points of contest. It is estimated that the revenue resulting from the transportation of one football aggregation on reduced rates was $9,000 less than if the group had been hauled under normal fares. Many of the carriers feel that, although the low rates induced some students to travel home, the additional revenue derived from the latter was offset by the loss created by those who always go home but who waited for the reductions.

North Western Studies Effects of Reduced Rates

The Chicago & North Western, in an effort to ascertain the true effect of reduced rates, sent each of its ticket agents a questionnaire asking the number of tickets sold during the holiday season of this year and last; the prevailing weather and highway conditions; an estimate as to the amount of new business created; and the amount of business that waited for the low fares. Some agents reported an increase in the number of tickets sold, others a decrease and some no change, the total number of tickets sold on the system showing a slight increase. In the majority of cases, the agents felt that much of the business would have moved in the absence of the reduction, one placing the amount at 95 per cent. Of the 62 agents at the more important stations, 18 said that patrons changed their plans and waited for the low fares. In their general comments, some of the agents expressed the opinion that the revenue from the increase in the number of tickets sold was less than it would have been with the higher rates; others said the public does not expect low rates and, since travel during the holidays is more or less of a necessity, it would be advisable to keep the higher fares; while still others thought the reductions created good will among the patrons but that the practice was not good business as far as the railroads' revenue is concerned.

A consideration of a few of the largest cities lends enlightenment. At Chicago, for example, the revenue for all of December increased eight per cent, thereby testifying to the value of lower rates, but one must also consider the weather conditions, the sales that otherwise would have been made at originating lines and the ticket sales which are normally made in January since, without reduced fares, the patron purchases his return ticket after New Year's day. It is impossible to determine what part of the increased revenue was due to the heavy snow fall around Chicago but a previous experience indicates the necessity for such an allowance. An example of the effect of the weather on revenue occurred during January, 1929, when Wisconsin experienced considerable snow and there were only seven days of the month with the temperature above zero. The revenue in that state under these conditions increased 12.7 per cent. At two other large points, the revenue during the holidays this year was less than last year, the weather at both places being such as not to disturb highway travel. The loss in revenue at these points may be due to the fact that patrons bought round trip tickets at the point of embarkation instead of a single fare to either of these points, and the return ticket from these points. The study as a whole favors the elimination of reduced rates during the holidays.

Tickets Designed for Gifts

Another means of popularizing travel was employed by the Pennsylvania this year when it prepared a ticket decorated with holly to encourage the giving of transportation as a gift to relatives and friends. By purchasing a Christmas order from a Pennsylvania agent at the regular rates, any one was able to present a friend or relative with railroad transportation and Pullman accommodations for a trip to or from practically any point in the United States situated on, or reached via, the Pennsylvania. The special order forms were printed on green safety paper. They were attractively decorated with holly designs and carried an appropriate seasonal greeting from the giver as well as from the Pennsylvania management.

This holiday, prepaid ticket form, when executed, showed the name of the purchaser and recipient and was an order on the ticket agent of a designated railroad, at a specific point, to deliver to the recipient, rail and Pullman tickets for the journey to be taken. In addition, the order provided for the presentation of a sum of money to cover meals and incidental expenses.

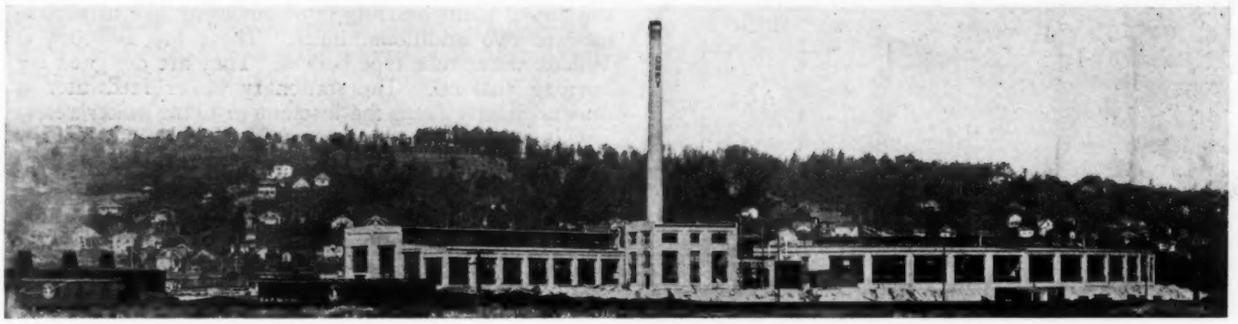
Christmas Decorations on Trains

Another example of the railroad's efforts to promote the Christmas spirit, was the use of Christmas decorations on passenger trains. Decorated and electrically lighted Christmas trees were installed in the observation and club cars of many trains during Christmas week while holly wreaths and other decorations adorned the dining cars where special menus were served. In addition, Santa Claus visited the children who were riding on Chrismas day.

Reduced fares, the heavy movement of passengers and Santa Claus made a busy week for the railroads, but, at the same time, they were able to handle the heaviest movement of mail and express so far recorded. The mail commenced to move earlier than in any previous season and necessitated additional cars and trains. The Northern Pacific added cars to its transcontinental trains on December 7, or about three days earlier than usual and, beginning December 15, operated six daily special mail and express trains—one each way—between St. Paul, Minn., and Duluth, Wis.; another fleet between St. Paul and Mandan, N. D.; and a third between Billings, Mont., and Spokane, Wash.

The Pennsylvania arranged extra equipment for trains and provided extra mail sorting cars at important mail centers. Railway mail-service representatives were assigned to all mail terminals to supervise the handling of cars and make an accurate check of the cars as they were used to meet an emergency or shortage at any point. Inbound Chicago mail over this road this year totaled 125 carloads up to December 20, exceeding last year's record on the same date by one car. This road's outbound Chicago mail to December 20 amounted to 152 carloads compared with 145 for the same period last year.

At the Union station, Chicago, which handles the mail for the Pennsylvania, the Chicago, Burlington & Quincy, the Chicago & Alton, and the Chicago, Milwaukee, St. Paul & Pacific in co-operation with the VanBuren terminal, considerable new equipment was obtained and the staff of employees enlarged. Seventy-five steel trucks were added, bringing the total number of these trucks in use to 800. The first indications of the Christmas rush came at the end of November when the total for that month revealed an increase of 90 carloads of mail over the same month last year. During the 15-day period, beginning December 11, a total of 1,880 carloads of mail was handled through this mail terminal as compared with 1,835 carloads during the same period of 1928, or an increase of 45 carloads. Of the 1,880 carloads, 752 were inbound and 1,128 were outbound in contrast with 734 carloads inbound and 1,101 carloads outbound in 1928.



General View of the Interbay Locomotive Terminal of the Great Northern at Seattle, Wash.

Fireless Engine Terminal on The Great Northern

New shop and terminal facilities for locomotive operation west of Cascades centralized at Seattle

AT INTERBAY, within the city limits of Seattle, Wash., the Great Northern recently completed a new locomotive terminal with modern shop, storehouse and enginehouse for handling all freight, passenger and switching power amounting to about 30 locomotive dispatchments daily. Both freight and passenger runs originating at this terminal are limited in operation to Vancouver, B. C., 155 miles north, to Portland, Ore., 182 miles south and to Skykomish, Wash., 85 miles east to the foot of the Cascade Range at which point all steam power is cut off, electric locomotives being employed to haul all trains through the mountains to Wenatchee, Wash., a distance of 71 miles including the famous Cascade Tunnel which is 7.79 miles in length.

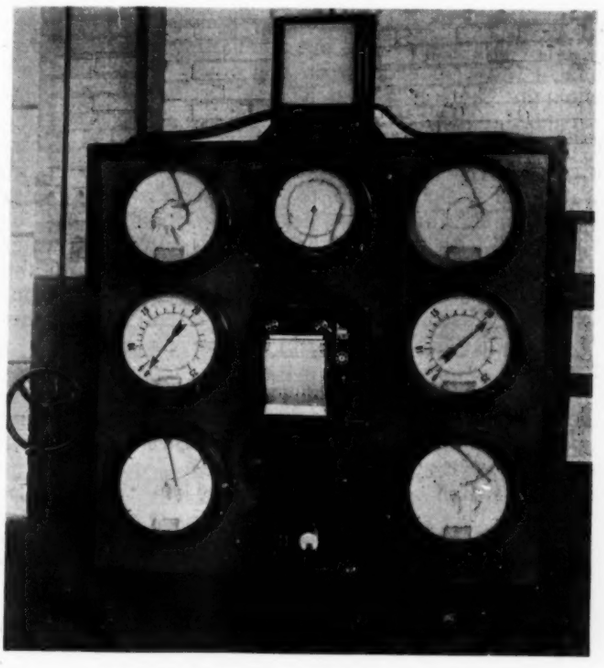
Transfer of Shop Facilities

The completion of this tunnel and the inauguration of electrified operation eliminated steam service over one of the most difficult operating districts on the Great Northern, but necessitated a rearrangement of locomotive terminal facilities on the western end of the line, resulting in the transfer of all shop facilities originally located at Delta, near Everett, Wash., to the new Interbay terminal at Seattle, the old enginehouse of frame construction being replaced by a 24-stall brick house and machine shop 177 ft. in length by 90 ft. wide, leading directly off from the enginehouse. The universal use of crude oil for locomotive fuel in this district made it unnecessary to construct either a coaling station or cinder pit at present.

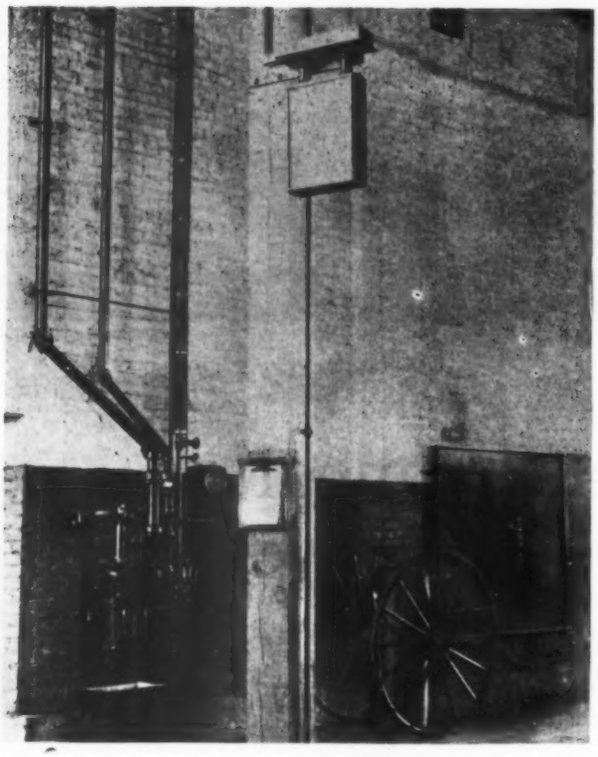
The largest motive power handled at the new terminal are Mountain type passenger locomotives of 54,838-lb. tractive force, over-all length of 95 ft. and boiler capacity of 3,950 gal. The largest freight locomotives are Mikado type of 64,300-lb. tractive force and boiler of 3,770-gal. capacity. A considerable number of smaller locomotives in both passenger and freight service are also handled and all of the switching power is relatively light. The shop facilities are designed to take care of all running and Classes 4 and 5 repairs, locomotives being moved to the shops at Spokane, Wash., for heavier work when required. Routine maintenance requires boiler washouts at monthly intervals only, an average of five to six locomotive boilers being refilled daily.

Locomotives Are Supplied With Steam From Stationary Boilers

All locomotive boilers not emptied are held under steam during their layover period in the enginehouse by a direct-steaming connection from the stationary power



Instrument Board in the Power Plant



Annunciator Panel in the Enginehouse to Show by Illuminated Number the Track Location of Locomotives Being Steamed

plant. When locomotives are to be held under steam for several hours, a ½-in. by-pass or "floating" valve, as it is called, is opened from the direct steam supply line which suffices to maintain a pressure of approximately 100 lb. on the locomotive during the lay-over period. Preparatory to departure, a 2-in. direct-steaming valve is opened, permitting the pressure on the locomotive to build up to about 150 or 160 lb. before the locomotive is moved out of the house.

If boilers are washed out at monthly inspection periods or have to be emptied for other repair work, or when locomotives are to be held in the engine house for more than 12 hours, the boilers are blown-down and emptied through an overhead connection into the blow-off line. When locomotive boilers are filled, both hot water and steam are admitted through an overhead mixing chamber of cast steel construction called the "booster." As soon as the boiler is filled, the water valve is closed and steam continues to flow into the boiler until a working pressure is built up, the locomotive being disconnected and moved out of the enginehouse under its own steam before its own fire is lighted.

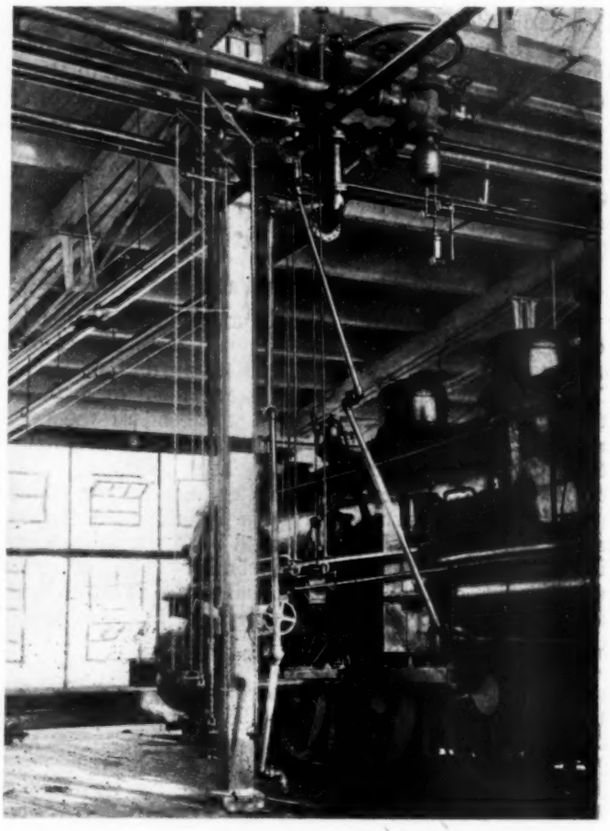
All valves for blowing down, filling and steaming locomotives in the enginehouse are located overhead, being operated by means of extension handles. Each main direct-steaming valve is equipped with a special electric contact switch adjusted to close when the valve is opened. These switches are wired to two illuminated annunciators one of which is located in the enginehouse and the other on an instrument board in the power plant.

The Power Plant Carries 225 lb. Pressure

A working steam pressure of 225 lb. is carried in the power plant. There are two 250-h. p. boilers although the power plant building is of sufficient size to accommodate two additional units. These are Babcock & Wilcox water-tube type boilers. They are designed for burning fuel oil. The stationary boiler feedwater is drawn directly from the locomotive filling water reservoir in which a temperature of 200 deg. F. is ordinarily maintained. The metering apparatus includes an indicator for the output of each boiler, recording and integrating instruments for each boiler, recording and integrating meters for the fuel oil and feedwater to the boilers, and a continuous CO_2 and stack temperature recorder for both boilers.

The total steam requirements for all auxiliaries, including the air compressor, a steam hammer in the blacksmith shop and heating the shop and office buildings, averages about 175-h. p. No steam heat is supplied directly to the enginehouse, as the locomotives standing under steam or steaming up radiate sufficient heat to maintain a comfortable temperature. The amount of heat required in the enginehouse is also materially reduced owing to the absence of smoke jacks. Only one boiler is operated at a time and under maximum conditions, the load does not exceed 225 per cent of the normal rating. One object of the indicator system above referred to is to prevent the unregulated use of steaming valves in the enginehouse which would exceed the capacity of this boiler and to assist in meeting the fluctuations in boiler capacity which ordinarily range from normal to 200 per cent rating.

The shop facilities include a small blacksmith shop and tool room. One enginehouse track extends through the entire length of the shop. A 5-ton crane of 48-ft. span with motor control from the floor also runs the length of the shop spanning one locomotive track. Most



Interbay Enginehouse Interior Showing the Blow-off, Filling and Steaming Connections

of the machine tool equipment at Interbay was transferred from the Delta shop at Everett and other shop points on the Great Northern.

Enginehouse Built Without Smoke Jacks

The Great Northern enginehouse at Seattle is the first to be designed and constructed without either smoke jacks or heating equipment in the round-house, although several additional terminals of this type have since been completed or are under construction. The entire interior of the house and shop is painted white. This, combined with the high monitor roof, produces an exceptionally light house; the accompanying interior views were photographed with natural lighting only. It will also be observed that the row of columns ordinarily placed about in line with the locomotive stacks have been eliminated to provide more convenient working space between the stalls. All overhead piping in the enginehouse is standard weight steel. Elimination of all smoke and gas in the house removes the principal cause of corrosion on which account extra heavy, wrought-iron pipe and pipe with protective coatings have been required. Steel sash throughout is another feature of construction which complete elimination of smoke and gas rendered practicable.

The Interbay Terminal at Seattle is one of a number of improvements representing a comprehensive program to modernize all important locomotive terminals on the Great Northern where extended runs have in many instances enabled the road to concentrate its expenditures at fewer points. Considerable has already been accomplished by this road in the way of enlarging the present enginehouses, providing electric draft fans of the Drafto type in place of open smoke jacks, installing mechanical cinder plants and a number of large coaling stations.

General Great Northern Program of Locomotive-Terminal Improvements

The program for locomotive terminal improvements on the Great Northern next year will include the construction of several modern boiler plants of sufficient capacity for direct steaming locomotives. These power plants will all be equipped for burning pulverized coal and designed for utilizing low grade coal available at low cost along the line of the Great Northern Railway. In some locations this fuel can be purchased for approximately one dollar a ton but is not suitable for use in locomotives. However, it has been found that it can be efficiently burned in pulverized form under modern boilers and effect a large saving in the consumption of high grade coal or fuel on locomotives at terminals by the direct-steaming method as described at the Interbay terminal.

Without some such feature as described, it would have been difficult to justify the cost of modern water-tube boilers of efficient size where the principal purpose of these boilers is to heat the enginehouse during winter months and supply blower steam for drafting locomotives that are being fired up. Offsetting the cost of improved boiler plants in new terminals, such as Interbay, are the savings accomplished through elimination of heating equipment, the use of standard weight steel pipe, use of steel sash and other economies through which it is estimated that a net saving in the cost of this project was effected as compared with an enginehouse as previously designed. The total investment involved in the construction of the entire locomotive terminal and shop facilities at Interbay was approximately $500,000.

Charges of Unfair Competition Denied

WASHINGTON, D. C.

THE Mechanical Manufacturing Company, Chicago, and R. O'Hara and W. A. Mayfield, of the traffic department of Swift & Co., have filed with the Federal Trade Commission answers denying most of the allegations in the complaint issued by the commission charging them with unfair methods of competition in inducing or compelling railways to purchase draft gears and other equipment by promises of a part of the Swift traffic or by threats of withdrawal of traffic.

The answer of the Mechanical company, signed by F. N. Beeson, says that the issues raised by the complaint, "if any there be in law, so far as they relate to the sale of draft gears to railways are entirely moot," because before the filing of the complaint respondent decided to discontinue its draft gear business and is now entirely out of the business except for the delivery of one or two small lots to complete delivery of contracts entered into during the fall of 1929. It is also stated that it "does not intend to again enter said business," and that "it does not manufacture or sell any other railway equipment to railways except bumping posts; that it has been a manufacturer of bumping posts for many years and that said bumping posts are of good material and workmanship and well suited for the purpose for which intended."

The company denies that the owners of its common stock or any one or any group of them are the principal shareholders of Swift & Co., or that during the past three years, in co-operation with R. O'Hara and W. A. Mayfield as traffic officers of Swift & Co., "it has sought to induce or compel any railway to purchase draft gears or other equipment from it by promises or assurances of a certain volume of traffic or increased volume of traffic over said railway or by threats of withdrawal." The company denies that it has received "any unlawful assistance or co-operation" from Messrs. O'Hara and Mayfield in the sale of its draft gears and equipment or that it has ever sold or attempted to sell any of its goods by such means. The answer also denies "that any of the alleged acts are to the prejudice or injury of the public or competitors," or tends to create monopoly or suppress competition, or that it has used unfair methods of competition.

The answers filed by Messrs. O'Hara and Mayfield admit that they are stockholders of the Mechanical Manufacturing Company but deny that they have ever sought to induce the purchase of railway equipment by promises of traffic or threats of its withdrawal. They also deny that the Federal Trade Commission has any jurisdiction over packers or their employees, by reason of the packers and stockyards act of 1921.

ACCORDING TO THE NEW BUDGET of the Polish government, 34,800,000 zlotys, ($3,904,560) will be devoted during the coming year to the construction of new railway lines. Other items of capital investment and operating cost included in the budget are: Construction of light railways, 9,320,000 zlotys; reconstruction of stations and terminals, 45,400,000; maintenance of roadway, 21,000,000; building of new stations, 6,000,000; new shops, 6,800,000; purchase of new locomotives, 17,600,000, and purchase of new cars, 41,000,000—a grand total of 147,120,000 zlotys, or approximately $16,507,000. Contracts already signed by the Ministry of Communications with European firms provide for the purchase of 14,000 freight cars and 1,100 passenger cars on ten years' credit.

Speeding Toward Paris On the Northern of France

Purchasing and Stores Methods on European Railroads*

Centralized standardization, de-centralized buying the vogue on Northern of France

By Norman F. Harriman

THE Northern railway of France, or the Nord, is one of the most important and progressive railroads of France. It operates 2,606 miles of main line, 2,919 locomotives, 5,186 passenger cars, 3,447 express cars and 91,752 freight cars.

The purchasing of this road differs from the purchasing on railroads of the United States, and from that of the other railroads studied by the writer in Europe in that the work is de-centralized except for certain items (e.g. rails and ties), which are purchased by special boards maintained jointly by all of the railways of France. The company is divided into three principal departments, the operating department, the rolling stock and engineering department, and the works and permanent way department. Each department is under the supervision of a chief engineer who controls the purchases for that department.

The rolling stock and engineering department has charge of purchases of parts of machinery, cars, trucks, new metals, tools, lubricating oil, soap, bolts and nuts, etc., and also of all commodities necessary for the supply of the co-operative stores available to all railway employees. In 1928, the orders of this supply section amounted to $2,800,000 for provisions, and to $7,400,000 for all other supplies. The coal supply section is also under the direct supervision of the rolling stock chief engineer who issues orders after their approval by the managing board of the railroad. These orders are generally based on special terms with fixed prices covering three months' supply. The annual consumption of coal is about 2,000,000 gross tons and comes chiefly from mines operated by the railway. The rolling stock department also buys locomotives, coaches, trucks, etc., after the managing board of the railway has taken action.

The roadway department has two purchasing offices. One deals with all matters concerning permanent way and buildings, with the exception of the timber and rails. Its purchases for 1928 amounted to $5,640,000. The other office buys all the lumber for the railway, with the exception of ties. In 1928, lumber purchases, including ties, amounted to $2,080,000. Orders for rails are handled by a joint board representing all of the French railway companies, and an office common to all the French railway companies called "Timber Central Office" buys most of the ties for the companies.

The operating department also has two purchasing offices. One purchases all the office supplies and accessories, amounting to $840,000 in 1928. The other is a purchasing office for electrical supplies, lighting and heating, the articles ordered amounting to $400,000 during 1928.

Scrap materials are disposed of at public sale by the manager of each department concerned.

A Purchasing Committee

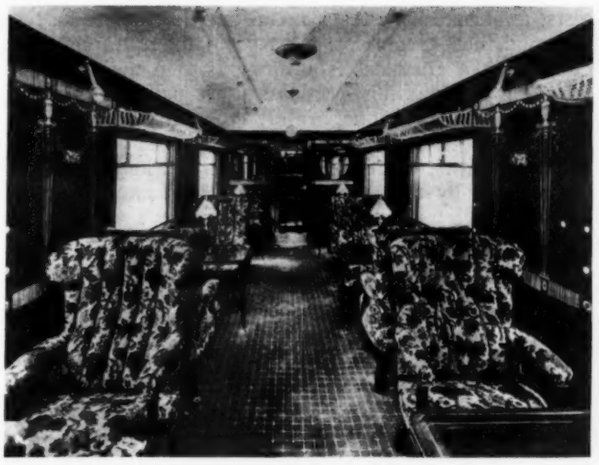
The orders for purchasing articles required for the ordinary supply of the railway are issued by the chief of the department concerned, after approval by the "Purchasing Orders Committee" which meets every two weeks. This committee is composed of the engineer in charge of the purchasing department and the chiefs of the various departments for which the purchases are

* The second of a series of articles, the first of which appeared in the issue of December 28, 1929.

made. It acts in the name of the company's "Managing Committee" which is composed of six members of the board of directors and is the executive element of the board. A member of the board is present at each meeting of the purchasing committee.

The committee makes sure that the orders comply with the real needs of the stores, either for stock or for authorized work; decides the number and quantity of items to be ordered, the time of delivery and the names of contractors to whom awards are made. Each department notifies the committee of all the difficulties encountered with the execution of every contract and must have the approval of the committee before rejecting supplies which do not conform with the terms of the contracts.

When new items of stock instead of ordinary supplies are to be bought, the purchasing order has to be approved by both the purchasing committee and the managing committee.



A Pullman Parlor-Dining Car on the Golden Arrow

How the Purchasing Is Organized

Each department which buys large quantities of articles has a purchasing office in charge of all commercial transactions necessary to meet the requirements of the service. The orders are divided into two groups—orders to be filled by the company's own plants and orders to be purchased from supply firms. The latter purchases are made either on conventional terms covering a year's supply, which is the case mainly with articles whose value is not subject to change, or by special arrangement.

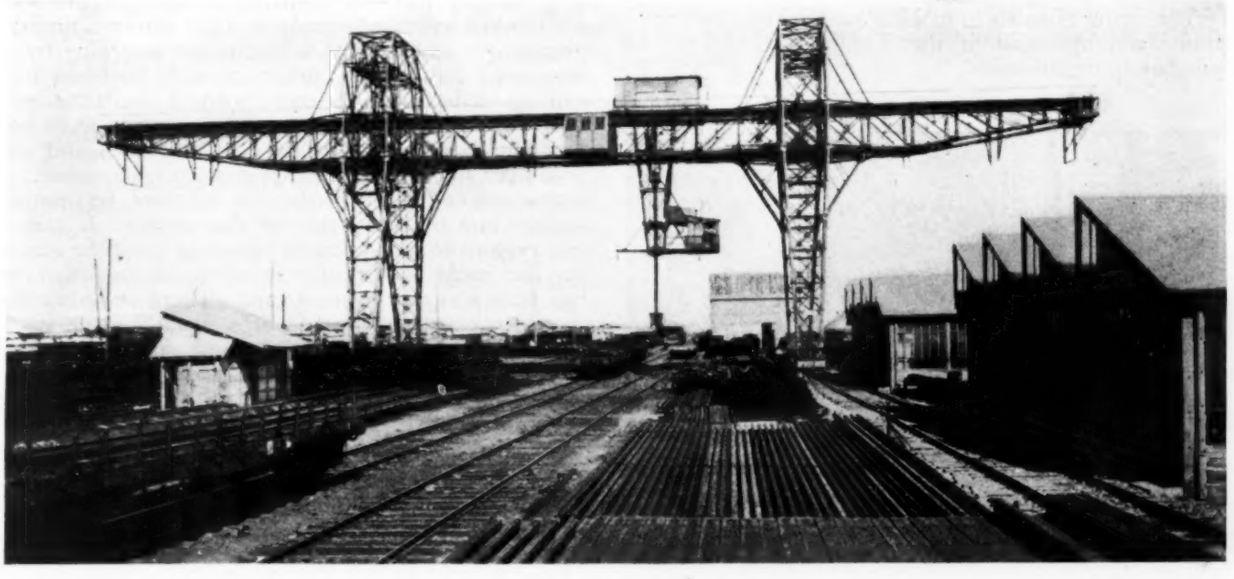
The orders for the same class of items are placed together and full particulars given as to the quality required. A file is made for each of the contractors who have been approved by the Purchasing Orders committee which selects the firms to whom orders will be issued. The orders are made out in quintuplicate, providing copies for the contractor, for the file, for the audit department, for the department requiring the supplies and for the testing department.

A record is kept by the office of each item bought, showing all the orders issued, their registered numbers and the prices and the names of the contractors. When a small order has to be issued, the purchasing office places the order with the bidder who last supplied the same article, if there has been no change in the prices and if the last order has been placed recently.

The request for purchases which may come from a local store or from the headquarters of the railway are of three kinds: (1) orders for new items for stock; (2) orders for renewing a supply; and (3) single emergency orders. Emergency requisitions are not sent directly to the purchasing department, but are first sent to the general stores which tries to meet the requirements from its own stock instead of making a requisition on the purchasing department, or strives to replace the article by substitution. The storekeepers avoid an increase in the number of articles stocked in each store as far as possible.

Test All Supplies

Supplies ordered by the purchasing department are delivered to the stores only after having been officially tested. The testing department is under the supervision of an engineer who has at his disposal an engineering testing laboratory where all kinds of physical testing is done, including locomotive tests, spring compression



A Rail Yard on the Nord

tests, air brake hose tests, metal anti-friction tests, tests of wood, heat-treatment, macro and micrographic tests, etc., while a chemical laboratory is also maintained in which metals, textiles, cordage, dyes, paints, lubricating oil, fuel oil, provisions, water, etc., are analyzed. Inspectors check the quality of the articles at the contractor's plants, while the quantity is checked at the time of delivery by the storekeepers. The roadway department has all its tests made at the mills by commercial specialists.

Centralized Standardization

The railways of France operate a central standardization bureau for the design and specification of locomotives, and passenger and freight cars, including specifications for some of the more important materials used in connection with them. This office was inaugurated shortly after the World War by the Minister of Public Works, when the railways were operated by the government and when large purchases of equipment were to be made to replace that destroyed during the war. Before these large centralized purchases could be made, it was considered desirable to adopt standard designs and specifications for a few types of locomotives and cars to replace the numerous types and designs formerly used by the several railways.

The central standardization office is supported by all of the French railway companies. The general policies are determined by seven directors, one from each of the French railway systems. The chiefs of motive power of the seven railway systems form the technical council of the bureau and the work is carried on by technical committees composed of experts from the several railways. The director is M. Renevey, and the active technical head is M. Paul Conte, ingenieur en chef, with offices at 1 avenue Bugeaud, Paris.

The railway standardization office collaborates closely with the French Standardization Association which is the national standardizing organization of France and functions under the Minister of Commerce and Industry, with offices in the French Chamber of Commerce, Paris.

The freight cars of France are now completely standardized and work is progressing with standard designs for the necessary types of locomotives and passenger cars, although the several railways still have their own designs for this equipment.

The writer is indebted to M. Paul Lavary, director of traffic and operation of the Nord, for details of its purchasing organization.

* * *

On the Norwegian State Railways

Accidents Investigated During May and June

TRAIN accidents which occurred in the month of May and June, and were investigated by the Bureau of Safety of the Interstate Commerce Commission, totaled nine; four collisions and five derailments. Following are abstracts of the reports made by W. P. Borland, director of the Bureau:

Norfolk & Portsmouth Belt Line, Port Norfolk, Va., May 1, 10:45 p.m.—A switching freight of the Southern Railway, entering the yard and finding on track No. 3 a long string of cars, pushed these cars forward without making sure that the track was clear; and the leading car of the string ran against the side of another switching train, on which the fireman was killed and the engineman was injured. Blame is placed on the brakeman who gave a proceed signal to the engineman without having received such a signal from the man nearer the point of danger. A circular had been issued by the yardmaster in October, 1926, calling attention to just such a situation as was encountered in this case.

Lehigh Valley, Owego, N. Y., May 3, 2:25 a. m.—An eastbound freight train drawn by two locomotives and moving at about 20 or 30 miles an hour, was derailed at a washout and the leading locomotive was overturned. The engineman and fireman of this engine were killed and the three employees on the second locomotive were injured. The washout was caused by an unusual flood or cloudburst in Young's Creek, which rises in the hills about six miles from the railroad. The flood having diverted the course of the stream, it washed against the embankment supporting the track, at a point 400 ft. away from the bridge beneath which the normal course of the river lay. Farmers near the point of accident said that they had had trouble at various times with this stream becoming clogged and overflowing its banks, and the inspector says that some action should be taken to keep the channel free.

New York, Chicago & St. Louis, Cleveland, Ohio, May 6, 11:25 p.m.—A switching freight train moving slowly west, with the locomotive at the rear, ran through a cross-over and collided with another switching train, moving in the opposite direction, with its locomotive running tender first; the engineman of the latter train was killed. The westbound train was to use the cross-over but to allow the passage of the eastbound, the cross-over switch had been set straight. The switch at the eastern end of the cross-over, however, was not set straight and the conductor of the westbound train is held responsible for being so far away from the switch that he could not change it when he saw that his own train was moving westward. There was a conflict of evidence as to the giving of a signal for the movement of this train westward. It appears that both of the locomotives were headed westward and therefore a hand motion to proceed would be the same when given to one locomotive as when given to the other.

Michigan Central, Dowagiac, Mich., May 4, 2:08 p.m.—Westbound passenger train No. 43, moving at high speed, struck an automobile truck on the crossing at Mechanic street and the driver of the truck was killed; four railroad employees and one person riding on the truck were injured. Mechanic street is only 15 ft. wide. There is a wigwag signal, with a warning

bell, controlled by the crossing watchman at Division street, 800 ft. west of Mechanic street; the watchman receiving warning of the approach of trains by means of an annunciator in his tower. The entire train was derailed and the locomotive was overturned. The inspector finds that the driver of the truck had entered upon the crossing directly in front of the train, though he had first brought his truck to a stop. Starting up, with his machine in either first or second gear, he and his companion looked first to the west and then to the east, but not soon enough. The evidence shows that the wigwag and bell were in operation, but the report calls attention to the fact that should anything happen to delay action by the watchman at Division street, a very dangerous situation would result. As the crossing is traversed by 47 trains a day "it is a question if more certain protection would not be provided by the automatic operation of wigwag and bells."

Southern, Dallas, Ga., May 15.—A work train moving at about 15 or 20 miles an hour, was derailed by a defective truck, and a ditching machine was overturned. The fireman of this machine was killed and its engineer injured. The defective car was built in August, 1906, and the report says that the primary cause of the failure was the worn and weakened condition of the wing of the end casting of a truck bolster. The wings of this casting had been worn thin and the fracture occurred across the rivet holes. The wrecked truck was examined by the engineer physicist of the commission, who says that the evidences of abrasion of this weak detail indicate defective design. It was found that the end of the car carrying the heaviest part of the ditching machine showed much more wear than the other end.

Northern Pacific, Spokane, Wash., May 17, 7:03 a.m. —Eastbound first-class passenger train No. 306, consisting of a single passenger car, a gas-electric motor, ran into the rear of extra freight train 1820 (66 cars) which had been stopped for a crossing and had been standing about 8 minutes. The caboose of the freight was wrecked and the conductor, who was on the platform of the caboose, was killed; seven passengers and 19 employees (16 off duty) were injured. The report places the blame on the conductor and the flagman of the freight and the motorman of the passenger train. The flagman had gone back but a short distance, depending as he says, on the rule which requires all trains to limit speed within yard limits to 20 miles an hour. The inspector, however censures him for assuming that this speed limit would be obeyed; he should have flagged according to rule, just the same as if he had been outside of yard limits. The motorman of No. 306 saw the freight train but did not realize that it was on the main track until too late. The report holds, however, that if he had been keeping a good lookout, he could have stopped. The engineman of the freight did not sound the whistle signal requiring the flagman to go back, and he gave as his reason that whistling was forbidden within the city limits; but the report calls attention to the fact that the rule of the city makes an exception in the case of the use of the whistle signal for communicating with a flagman. Steps should be taken, says the report, to have employees correctly understand the rule of the city concerning whistling.

Pere Marquette, Glen Lord, Mich., May 28.—Southbound mixed train No. 16, said to have been moving at about 20 miles an hour, was derailed at a facing point switch which had been run through by a train moving in the opposite direction; engineman killed and fireman injured. The damage to the switch had caused an automatic block signal to indicate stop, and this train was moving on a caution card with instructions to expect to find an obstruction; but for some reason which is not entirely clear, both the engineman and the fireman failed to notice anything wrong until they reached the switch. The inspector thinks the speed was much higher than 20 miles an hour.

Eastern Michigan, Ortonville, Mich., June 2.—Northbound passenger train No. 19, consisting of a single electric motor passenger car, moving at about 15 to 25 miles an hour, ran over a misplaced switch and into the rear of a gravel train standing on a side track, and the passenger car was crushed for about 8 ft. of its length. Sixty passengers and one employee were injured. The passenger train had stopped at the station, about 1,100 ft. back, and had been notified of the presence of the gravel train; and the motorman, indeed, said that he saw the gravel cars standing on the side track; but he did not notice that the switch was open until too late. The switch stand has a target 14 in. by 31 in. and the report holds that there was no reason why he could not have stopped from a moderate rate of speed after he came within sight of the switch.

New Orleans Great Northern, Bogalusa, La., June 15. —A northbound freight train moving at about 30 miles an hour was derailed at a facing point switch and some of the derailed cars fell against a gasoline motor passenger car, standing on a side track (southbound passenger train No. 111) and knocked it over. This car was practically demolished and the baggageman of the train was killed and the engineman injured. The switch had become loose because of a defect in the switchstand. It was found that the bolt which goes through the inner sleeve and holds the spindle in position had been badly worn and the square bottom of the sliding sleeve and the socket in the top of the star block were too much worn. The inspector believes that this combination left so much slack that the switch lever was locked without fully closing the switch points. The investigation of the meeting of the southbound passenger train and the northbound freight brought out the fact that the employees had indefinite notions as to what switch should be used when the side track was to be entered; and the report recommends that steps be taken immediately to insure that all concerned have a uniform understanding as to just how far a train can move on an order fixing a meeting point.

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On the Missouri Pacific at Garnett, Kan.

Looking Backward

Fifty Years Ago

The Central Pacific [now part of the Southern Pacific] on January 1 placed in service its new line east of San Francisco, Cal., which has the effect of shortening its route between that city and Sacramento by 46 miles. This reduction in distance and other time-saving measures have shortened the scheduled time of passenger trains between San Francisco and Ogden nearly six hours.—*Railroad Gazette,* January 16, 1880.

One of the unexpected features of the opposition to the Reagan bill which developed before the House of Representatives commerce committee hearing on January 13 was the frank avowal by an officer of the Erie that that road is willing to recognize the principle of national control of interstate commerce, while insisting that the principles and form of the Reagan bill, which is designed to effect that government control, are destructive to the interests of both the producers and the consumers.—*Railway Age,* January 15, 1880.

Passenger rates from Chicago to almost all western points have been utterly demoralized for the past few weeks, each road giving as an excuse for cutting rates that some other road inaugurated the reduction. The general passenger agents of the Chicago roads have held several meetings within the past week for the purpose of putting a stop to the cutting of rates from this city to points in Kansas and Colorado. At a final meeting an agreement was reached providing for the restoration of rates to the old basis and the payment of not more than one dollar as a commission on each ticket sold.—*Railway Age,* January 15, 1880.

Twenty-Five Years Ago

The Minneapolis, St. Paul & Saute Ste. Marie has completed its branch between Detroit City [now Detroit Lakes], Minn., and Emerson, Man., 177 miles, providing it, in conjunction with the Canadian Pacific, with a through line between St. Paul, Minn., and Winnipeg, Man.—*Railroad Gazette,* January 20, 1905.

The plans of the administration for railway legislation have been taking shape in the bill on which Senator William P. Hepburn has been working. It is the plan to strip the Interstate Commerce Commission of its purely administrative functions and to lodge these in a bureau of the Department of Commerce and Labor; the power of the Commission is to be increased to enable that body to fix rates subject to appeal to a court of interstate commerce, and a court of interstate commerce is to be created to which rate controversies may be appealed. It is the idea of President Roosevelt to have the numerical size of the Commission reduced, but to have a general increase in salaries in order that the best talent in the railway world may be secured for these places.—*Railway Age,* January 20, 1905.

Ten Years Ago

Representatives of 147 shippers' organizations, aggregating more than 75 per cent of the tonnage of the country met in Chicago on December 30 to protest against the rate provisions of the Cummins bill.—*Railway Age,* January 16, 1920.

The automatic train control committee, which was appointed a year ago by the Director General of the Railroad Administration, has made its report to the director of the Division of Operations. It recommends a continuance of its work, after the return to private operation, through a committee of the American Railway Association. Among its conclusions is one which states that more extended service tests are necessary before a decision can be reached on the availability for general practical use of any of the automatic train control devices inspected by the committee.—*Railway Age,* January 16, 1920.

New Books

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Descriptive List for Use in Acquiring and Discarding United States Government Periodical Mimeographed Statements. A list with notes of the current statistical reports issued in mimeographed form by the Government bureaus and departments, when issued, and advisability of keeping for data nowhere else available, 76 p. Pub. by Special Libraries Association, Providence, R. I., $1.75.

Handbook of American Trade-Unions 1929 Edition. Bulletin 506 of the U. S. Bureau of Labor Statistics containing data on history, objects, territorial and trade jurisdiction, government, qualifications for membership, agreements, official organ, headquarters and total membership of trade-unions, including 22 railroad unions (p. 78-100). 218 p. Pub. by U. S. Govt. Print. Off., Washington, D. C., 30 cents.

Map Collection in the District of Columbia. List libraries and organizations having map collections, outlining the scope of each collection. 46 p. Pub. by Board of Surveys and Maps of the Federal Government, Washington, D. C. *Apply.*

Statistical Abstract of the United States 1929. (51st Number) Section 20 contains statistics of steam and electric railways and express companies, including mileage owned and operated classified by trackage (p. 393), railway mileage by states by decades from 1860-1920 and 1925, 1926, and 1927, railway mileage owned and operated 1842, 1850, 1855, 1860, 1865 and 1870-1927, statistics on employees and their compensation, securities outstanding, freight and passenger traffic and revenue, taxes and special assessments by states, and "Principal railway companies" by regions (p. 412-413). Figures are also given for the Pullman Co. (p.420) and the Alaska Railroad (p. 421). 868 p. Pub. by U. S. Govt. Print. Off., Washington, D. C., $1.

Uncle Sam's Camels—The Journal of May Humphreys Stacey Supplemented by the Report of Edward Fitzgerald Beale (1857-1858), edited by Lewis Burt Lesley. The first-hand story of the trip of the first and last U. S. Camel Brigade that made its way from San Antonio, Texas, to Bakersfield, California, in the late 1850s. "The first suggestion of the use of the camel in this period came from military officials who were constantly combating Indians on the frontier. Supplies were slow in reaching the forts of the Southwest and it seemed plausible that the rapid-moving camel would solve the problem of transportation in that regard." p. 4. Lieut. Beale's report concludes "A year in the wilderness ended . . .I have tested the value of the camels, marked a new road to the Pacific, and travelled 4,000 miles without an accident." p. 281. 298 p. map. Pub. by Harvard University Press, Cambridge, Mass., $4.

Periodical Articles

Details of the Proposed Short Line Freight Railroad Across Pennsylvania, by Benjamin Baker. Map and profiles are included in this description of the New York, Pittsburgh and Chicago. Annalist, January 10, 1930, p. 52-54, 86.

How Safe Are Rail Dividends? by F. J. Lisman. The author concludes that they are safe. Financial World, January 15, 1930, p. 17, 60.

What the Consolidation Plea Means to Rail Investors, by Pierce H. Fulton. Summary of and comment on the Commission's plan, 159 ICC 522. Magazine of Wall Street, January 11, 1930, p. 435-437, 488-491.

The World's Highest Railway, by A. Hyatt Verrill. Pictures of the highest station, the highest bridge and other features of a Peruvian railway. Science and Invention, February 1930, p. 880.

Odds and Ends of Railroading

Railroader-Match King

Railroaders lêaving the service sometimes arrive at queer posts. Ivar Kreuger, once a lineman for the Illinois Central, is now the head of the international match trust, with headquarters at Stockholm, Sweden, and is rated not only as one of the wealthiest men in Sweden, but in all of Europe as well.

Marathon Golfer

T. L. Kaufman, instrument man for the Illinois Central at Clinton, Ill., believes that he holds an endurance record of some sort for playing golf. Recently, he played for 14 hours over a nine-hole course at Clinton, making 17 rounds, or a total of 153 holes. He began at 4.53 a.m., and finished at 6.50 p.m., with time out for lunch. The fastest round was played in 37 minutes.

A Lucky Boy

Eugene Didelotte, aged four, of Evansville, Ind., is one of the few people who have ever been run over by a 20-car freight train and come out unscathed. The child was walking along the Louisville & Nashville embankment, when he was struck by one train and knocked under another. A score of cars passed over him before the train could be stopped. Anxious trainmen pulled Eugene out from underneath, entirely unharmed and quite undisturbed by his hairsbreadth escape.

The New Day

When C. P. Fisher was appointed trainmaster on the Indianapolis division of the Pennsylvania, he expressed a natural desire to see his new territory. Superintendent J. T. Ridgely gratified this wish in a novel fashion. He chartered a Curtiss five-seater plane and took the new trainmaster along with him. They were up only 20 minutes, but in that time they had obtained a complete view of the Indianapolis facilities, particularly comprehensive since it comprised a sort of vivid map.

He'll Have "Pullman Office"

The distinction of being the most travelled executive in American industry will soon be held by Robert W. Woodruff, Atlanta capitalist, observes Sales Management. Mr. Woodruff, who is president of the Coca-Cola Company, with headquarters at Atlanta, has just been elected president of the White Motor Company, of Cleveland, and proposes to direct both industries personally, although it will mean maintaining a "Pullman car office" on trains between the middle west and the far south.

A Peculiar Political Maneuver

The Orient Express was held up recently by a band of ten Macedonian revolutionaries, Jugoslav authorities say. A band halted the train with a bomb on the tracks and passengers were covered with rifles while sleepers were plundered. The engineer and fireman uncoupled the locomotive and sped to Zaribroad, the next station, for help. Jugoslav gendarmes pursued the bandits to the Bulgarian frontier. Jugoslavs say that the bandits wished to disturb Jugoslav-Bulgar relations which have recently been improved by a treaty.

A Hare-Raising Switchman

In addition to serving as a yard foreman for the Louisville & Nashville, John T. Garner is secretary of the Alabama Rabbit Breeder's Association, and secretary-treasurer of Garner & Sons Rabbitry. His "Excello," a New Zealand red buck, won first prize at Los Angeles and San Diego in 1928, and at Birmingham in 1929.

A One-Sided Tunnel

Did you know that there is a railway tunnel in this country that has only one portal? Unless you have been over the three-year old Cascade line of the Southern Pacific in Oregon, you probably didn't. This tunnel is to be found at the summit of the Cascades. It was necessary, at this point, to build a wye on which helper engines could turn to go back down the mountain. These wasn't enough space to build the wye entirely in the open air, so the engineers solved the problem by building a tunnel to accommodate the stub end of the wye. The bore runs several feet into the mountain and then stops.

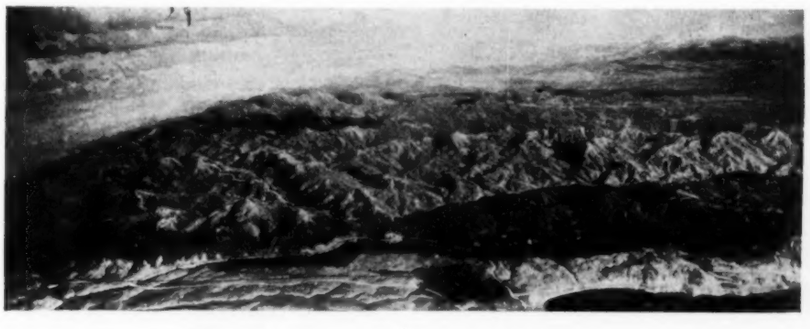
Prize Model Builder

Because he lacked the required height to satisfy a life-long ambition to become a railway man, John Matthews, a Chicago plumber, built his own railroad on a miniature scale. Two years were needed to build it, the rolling stock consisting of a locomotive, a tender and two cars. The locomotive, with its tender, is 4 ft. 6 in. long, weighs 115 lb., and has a working steam pressure of from 90 to 120 lb. Last year Mr. Matthews displayed his train in London at the Model Engineering Exhibition. There the locomotive set a record by hauling 17 persons at one time. A bronze medal, a diploma in model engineering and a silver loving cup were awarded Mr. Matthews.

California Railroads Shown on Panoramic Model

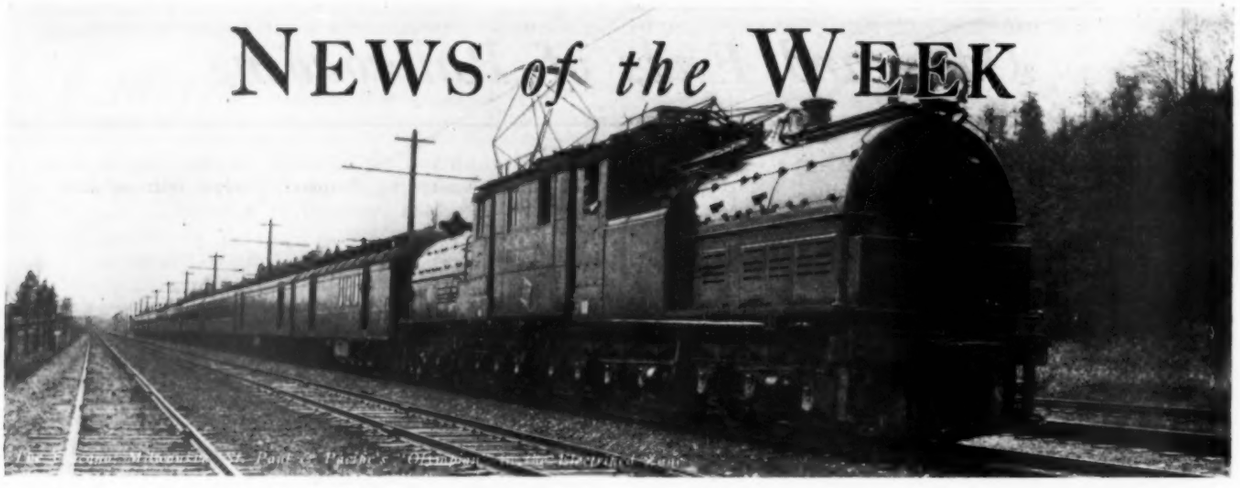
All railroad systems in California have been reproduced on a panoramic model of that state which is now located in the San Francisco Ferry Building and which was built by the California Chamber of Commerce in co-operation with the counties. In the construction of the model, which is 600 feet long, a circular saw, operated by a dental motor through a flexible shaft, was used in cutting the railroad systems through the wooden mountains and in building the bridges and other structures which are made of strips of wood 1/16 in. thick.

Large cities such as San Francisco, Oakland and Los Angeles are built in detail. The Southern Pacific passenger depot and the entire system of piers on the San Francisco water front, as well as other important structures, are included. Miniature models of the trains operated by the various railroads are arranged at various points along the lines.



Thousands of People View the Model Daily

NEWS *of the* WEEK



THE HOUSE on January 14 passed the War Department appropriation bill, including $55,000,000 for rivers and harbors.

DAVID H. HOWIE, secretary of Lee Higginson Trust Company, Boston, has been appointed executive secretary of the New England Governors' Railroad Committee. It is said that Mr. Howie will resign from his other official activities and will devote his entire time to the new secretaryship.

THE RAILWAY CLUB OF PITTSBURGH (PA.) will hold its next meeting on Thursday evening, January 23, at the Fort Pitt Hotel, Pittsburgh. W. R. Cost will speak on "Aviation and the Railroad." The meeting will be preceded by a dinner at the hotel at six o'clock.

THE INTERSTATE COMMERCE COMMISSION, on January 16, made public a decision finding the Baltimore & Ohio to have violated the Clayton Anti-Trust Act by acquisition of 42 8/10 per cent of the stock of the Western Maryland, and an order requiring it to divest itself of the stock within six months. Commissioners Farrell, Woodlock and Brainerd dissented.

THE SAFETY SECTION of the American Railway Association will hold its tenth annual meeting at the Antlers Hotel, Colorado Springs, Colo., on Tuesday, Wednesday and Thursday, June 24, 25 and 26. L. G. Bentley, chairman, in circular No. 252, gives rates at the Hotel (American Plan) from ten dollars a day upward; also rates on the European plan at the Acacia and the Alamo. As the number of single rooms at the Antlers is limited, members are advised to make early arrangements for their accommodations.

Wage Statistics for October

Class I railways reported to the Interstate Commerce Commission a total of 1,749,859 employees as of the middle of October, 1929. The total compensation was $263,661,353. Compared with returns for the corresponding months of last year, the summary for October shows an increase in the total number of employees of 25,429, or 1.47 per cent. The total compensation shows an increase of $7,301,838, or 2.85 per cent.

The total number of railway employees as of the middle of the month of November was 1,680,063, a decrease of only .02 per cent as compared with November, 1928, according to the commission's preliminary statement. As compared with November, 1927, however, this was a decrease of 2.83 per cent. As compared with November, 1928, there was an increase of 1.83 per cent in the maintenance of way and structures group, but decreases of .68 per cent in maintenance of equipment and stores, .73 per cent in train and engine service, .45 per cent in yardmasters, switchtenders and hostlers, and 1.67 per cent in other transportation employees.

Investigation of Holding Companies Considered

The House committee on rules held a hearing on January 15 on the Parker resolution providing for an investigation by the committee on interstate and foreign commerce of the relations between railroad and holding companies, investment trusts, etc., and was to consider the subject on the following day to decide whether to report a resolution providing for the consideration of the Parker resolution by the House. This is in an effort to obtain action sooner than would be possible under the regular rules. Chairman Parker of the committee on interstate and foreign commerce said it was desired to complete the investigation before taking up the subject of consolidation legislation.

Judge William E. Lee Appointed to I. C. C.

President Hoover on January 9 nominated Judge William E. Lee, of the supreme court of Idaho, as a member of the Interstate Commerce Commission to fill out the unexpired term of Johnston B. Campbell, resigned, which runs to December 31, 1931. The President had said he would appoint some one from the intermountain country. Judge Lee was endorsed for the appointment by Senators and Representatives from Idaho and neighboring states as well as by members of state commissions and chambers of commerce and other organizations from Idaho, Oregon, Washington and Utah. According to the memorandum made public at the White House he is 50 years of age. He was graduated from the University of Idaho in 1903 and later completed his legal education at the University of Washington and the National Law School. Prior to 1923 he was engaged in the active practice of law. He was elected to the supreme court of Idaho in 1922 and re-elected in 1928. He also served as judge advocate during the World War.

The Senate committee on interstate commerce voted unanimously on January 15 to report that Judge Lee's appointment should be confirmed, after a brief hearing at which he was questioned by members of the committee as to his views on various questions pertaining to railway regulation. He "passed the examination" successfully after stating that he had had no transportation experience and had no specific views to express on such questions as valuation and consolidation. He said he had no formula for ascertaining fair value but that the Supreme Court had held that all elements of value should be taken into consideration. Senators Smith and Wheeler asked if some of the elements were not subject to modification by legislation and Judge Lee replied that he understood that legislation as to value would be subject to court review. He said he had not studied the question of consolidation and was not familiar with the lake cargo coal rate case. Asked if he was familiar with the long-and-short-haul question, understood to be a burning one in the intermountain country he replied: "I just know what it is."

Valuation and Consolidation

Senator Pittman, of Nevada, has announced his intention of offering an amendment to the Fess railway consolidation bill, so as to provide that before consolidations may be approved by the Interstate Commerce Commission an agreement as to the valuation of the properties for rate-making purposes must be consummated, subject to the approval of the commission. His idea apparently was that this would afford

a way of ending controversies as to valuation. The announcement was made during hearings on Senator Couzens' communications bill, and the Senator asked Commissioner Eastman his opinion of it when he testified concerning the bill. Commissioner Eastman said the suggestion was a novel one and that he would prefer to postpone his answer until the proposed amendment had been put in writing and submitted to the commission. Commissioner Eastman expressed the opinion, which he said he thought was shared by the other commissioners, that the supervision of communications companies should be by a separate commission.

Senator Fess expressed the opinion that such an amendment as that proposed by Senator Pittman would prevent any consolidations.

B. & M. Children Assisted by Loring Fund

Sons and daughters of employees of the Boston & Maine, to the number of 57, have been assisted in their college education in the school year 1929-30 by scholarships from the Boston & Maine Railroad Employees Fund, according to a report made to the trustees.

Young men and young women in universities, normal schools, business colleges, music schools and other institutions of learning have been given substantial sums toward the cost of their tuition. In all, $4,000 was allotted for the present school year.

The fund, which was created in March, 1928, upon the retirement of Homer Loring as chairman of the Executive Committee, is one to advance the general welfare of the employees. Income from the trust is also used to provide free medical treatment for employees at the Massachusetts General Hospital, where two free beds have been established by the fund.

The youngsters who have been helped in the present school year embrace those of a wide range of the employees including the following taken at random from the report: Foremen, passenger trainmen, enginemen, time keepers, conductors, inspectors, agents, switch tenders, janitors, stevedores, gatemen, chief clerks, telegraphers, towermen, fuel foremen, computers, signalmen, and road foremen.

$216,000,000 Needed to Complete Rivers and Harbor Work

Brig. Gen. Herbert Deakyne, assistant chief of engineers, recently testified before a sub-committee of the House appropriations committee regarding the rivers and harbors improvement items in the War Department appropriation bill reported to the House on January 6. (See *Railway Age* of January 11, page 173.)

He said that according to the latest revised estimates it will cost about $216,000,000 to complete all projects for river and harbor improvements which have been authorized by Congress but not yet appropriated for, exclusive of the 1931 estimate and exclusive of the $34,000,000 difference between the amount Congress has authorized for the Missouri river and the estimate of $46,000,000 for the completed project. The latter figure, he said, was based on a report made nearly 20 years ago and when it is revised it will undoubtedly be increased considerably. The present project calls for a 6-foot channel as far as Sioux City. Over $20,000,000 a year is required for maintenance of completed channels and necessary overhead expenses, he said, and an annual appropriation of $55,000,000 should take care of maintenance and practically complete the new work remaining on the books in possibly seven years, although new projects undoubtedly will be adopted in that period. Lieut. Col. E. L. Daley, in charge of the river and harbor improvements section in the office of the chief of engineers, gave the committee a statement showing aggregate expenditures on the Mississippi river system of $396,687,709 and $95,385,407 for intercoastal canals and other waterways.

Canada's New Railways Minister

Hon. Thomas Alexander Crerar, who was last month appointed by Premier Mackenzie King at Ottawa as Minister of Railways and Canals of Canada to succeed Hon. Charles A. Dunning, now Minister of Finance, was born at Molesworth, Ontario, but in his early youth moved with parents to Manitoba where he was educated in the public and high schools of Portage la Prairie. Mr. Crerar went

Thomas A. Crerar

West when the rail access to Winnipeg and Manitoba was through St. Paul, the Canadian Pacific not yet having been built.

After his apprenticeship at farming he entered the grain business, and what his predecessor in the railway post, Mr. Dunning, did in the adjoining province of Saskatchewan, Mr. Crerar did in Manitoba. These two are regarded as the main dynamos, if not the pioneers of the co-operative grain handling business in Western Canada. He a little later became a director of and later president of what is now known as United Grain Growers, Limited, also the Grain Growers Export Company.

In 1917 when Premier Borden formed the Union (War) government at Ottawa Mr. Crerar was induced to take the portfolio of Agriculture which he held until the end of the war. When the federal general election of the fall of 1921 came Mr. Crerar was found leading the Progressive party which was then a powerful factor in federal politics. As leader of that party in the House of Commons Mr. Crerar was active as an agitator for the restoration of the Crow's Nest Pass Agreement freight rates on certain commodities in Western Canada. After ceasing to be Progressive leader Mr. Crerar remained a member of the House but in the fall of 1924 he retired from politics and devoted all his time to his big grain business in Western Canada.

It is generally conceded that one reason, in addition to that of his widely known executive ability, for the appointment of Mr. Crerar as Minister of Railways is rather of a political nature. It was Manitoba and Saskatchewan that led for years the agitation for the construction of a railway to Hudson Bay. Now there is every prospect that that road will be completed and in operation during the present year, and it is believed fitting that a Manitoban should be Minister of Railways at the completion of that project.

Safety Program for February

Circular No. 251 of the Safety Section, A. R. A., which has been issued by E. R. Cott, chairman of the Committee of Education, is devoted to admonitions emphasizing the precautions necessary to be taken in railroad work at this time of year be-

cause of the presence of snow and ice. Prevention of the formation of ice, where practicable, is one of the duties to be remembered, as is indicated by the picture of a fireman taking water. Other pictures in this pamphlet show the wisdom of sweeping off ice and snow from footboards of tenders and from grab irons. The man who knocks down a big icicle from the eaves of a shop or office building may sometimes be a benefactor to a fellow employee who might be standing beneath when such an icicle broke off and fell.

During the extreme weather of January and February last year, a number of railroads issued instructions forbidding men to mount or dismount from any moving engines or cars "during prevailing weather conditions." Among ten suggested rules in this pamphlet is one dealing with this point. Another rule suggests that trainmen should wear short overcoats; long ones may prevent free use of limbs. Employees should be warned that when bundled up in thick clothing, special care must be taken to look out for approaching cars or engines which may not be heard. "Make available ice grippers, to

Safety Section Bulletin No. 80.

be worn on shoes when weather conditions require." A spell of severe cold weather is a time when hostlers should take special care never to move an engine without first ringing the bell. Foremen are enjoined to watch their men all the time; "do not delegate that duty to another."

Reading Signs Contract for Electric Power

One of the largest contracts in the history of the public utility field was signed on Thursday, January 9, by Agnew T. Dice, president of the Reading, and William H. Taylor, president of the Philadelphia Electric Company, for the power incident to the electrification of the Reading's suburban lines. This contract, which ultimately involves an expenditure of $1,500,000 a year, was consummated in the president's office at the Reading terminal, after negotiations covering a period of three years.

The contract will be in effect for 20 years and may be extended by the Reading for 10 years additional. It may also be terminated at the end of 10 years by the Reading, with certain provisions for the purchase of equipment installed by the electric company for the Reading's exclusive use.

The power will be used for the operation of electric trains, including electric heating, and also for the new electric color light signal system now being installed by the Reading throughout the Philadelphia metropolitan district. It will be taken from the Conowingo hydro-electric generating station on the Susquehanna river, and also from the Richmond and other steam generating stations of the Philadelphia Electric Company. It will be supplied by underground, 13,000-volt cables, carried to a frequency changing station to be erected by the Philadelphia Electric Company, at an approximate cost of $1,500,000, at Wayne Junction, Pa., between the Chestnut Hill and Tabor branches, adjacent to the new electric car shop which is nearing completion at Wayne Junction. In this station the 60-cycle current will be changed to 25 cycles, which is the form required by the railroad for train operation. The initial capacity of this frequency changing station will be 30,000 kilowatts and provision has been made for expansion to 90,000 kilowatts, at an ultimate cost of approximately $4,500,000.

The power from Conowingo, from which point 50 per cent of the energy required will be derived during the first year's operation, is carried from the Plymouth Meeting sub-station over high tension lines erected over the Reading tracks along the Schuylkill river.

In this contract, due to its running for 20 years, the Philadelphia Electric Company is enabled to obtain full life out of equipment installed for the railroad, and the Reading is enabled to share in the results of increased efficiency, economy and decreasing cost of power resulting from central station improvements.

The Reading will start to take power on May 1, 1931, two months prior to the actual operation of the first line to be electrified between the Reading Terminal at Philadelphia and Lansdale, Pa. Approximately 20,000,000 kilowatt hours per year will be used for the suburban service, and the bill under this agreement will amount initially to approximately $300,000 per year. After the Reading's through passenger and freight trains are electrified the consumption will be 200,000,000 kilowatt hours per year.

Work is being pushed on the Reading's $20,000,000 electrification program. Immediately upon completion of the line to Lansdale, the main line as far as Langhorne and the Chestnut Hill Branch will be electrified. Work on the grade crossing elimination on the Chestnut Hill Branch will begin in the spring. Upon completion of the first program it is understood that the lines will be electrified to New York, Bethlehem, Pa., and through the Schuylkill valley as far as Reading, Pa. The total cost of this electrification will be $52,000,000.

Railway Supply Association Plans June Exhibits

Arrangements have been completed by the executive committee of the Railway Supply Manufacturers' Association for the bi-ennial convention, which is to be held in the municipal auditorium hall and exhibition building at Atlantic City, N. J., from June 18 to 25, 1930, coinciding as usual with the Atlantic City meetings of the Mechanical Division of the American Railway Association, June 18 to 25; of the Purchases and Stores Division of the A. R. A., June 18 to 20, and of the Motor Transport Division of the A. R. A., June 18 to 20.

Exhibits presented by the supply dealers will be arranged on both floors of the exhibition hall, while it is expected that track exhibits will be located, as in the 1928 convention, on the tracks of the Pennsylvania and Reading passenger terminals. The committee in charge of the convention has completed the necessary arrangements for supplying all exhibition spaces with electricity, water, air, gas and drainage, while suitable plans have also been drawn up for the delivery of exhibition material to the hall and for the marking of exhibits.

Interest in the convention to date indicates a larger number of exhibitors than at any previous meeting, while conferences between the Supply Manufacturers' Association committee and officers of the railroad organizations named above also indicate a larger railroad attendance than heretofore.

* * * *

The Chicago & North Western Woman's Club Preparing Christmas Baskets for the Poor in the Club Rooms at Chicago

Traffic

The St. Louis Southwestern has put on a new fast passenger train to the southwest, leaving St. Louis at 11:30 p. m.; and a new through train to the southwest from Memphis, Tenn., starting at 8:30 a. m.

"Crates for Reed and Fiber Furniture" is the title of Bulletin No. 20 which has been issued by the Freight Container Bureau, A. R. A., 30 Vesey street, New York. This is a four-page leaflet filled up largely with pictures illustrating the method of crating a rocker, a settee, a chair and a table.

A bill to permit common carriers to give free carriage or reduced rates to state commissions exercising jurisdiction over common carriers has been introduced in Congress by Senator Smoot, of Utah, and Representative Colton, of the same state.

New manufacturing establishments installed at places on the Southern Railway System in the year 1929 numbered 137; and, in addition to these, it is stated that 83 existing plants were enlarged or improved. These new works represent seventy millions of capital and give employment to nearly 20,000 people.

An item of $128,750,000 for inland transportation of mails by railroad routes and mail passenger service is included in the appropriation bill for the Postoffice Department for the fiscal year 1931 as reported by the House appropriations committee. This compares with $129,500,000 estimated by the Budget Bureau and with an appropriation of $126,000,000 for the fiscal year 1930.

The Interstate Commerce Commission has issued a decision finding unjustified and requiring the cancellation of tariff schedules proposing to reduce the freight rates on iron and steel articles from points in Atlantic seaboard territory, over rail-ocean-rail routes, to Texas destinations, which were suspended on protests filed by manufacturers located at Chicago, Youngstown and other points west of Atlantic seaboard territory.

The Appellate Division of the Supreme Court of New York has reversed an order, which had been issued by a lower court, forbidding the storage of newsprint paper and other merchandise on the New York City piers of the New York Central and other roads. The order had been issued on the basis of a statement that the freight was in storage, but the Appellate Division holds that the goods were in transit and, therefore, not subject to the argument which had been presented under statutes dealing with storage proper.

More than 50,000 persons attended the 56 open-air meetings held in connection with the recent 12-day tour of a dairy and poultry special train operated by the Illinois Central in Mississippi and northern Louisiana. The four cars of exhibits included 20 pure-bred registered Jersey bulls, a dairy herd improvement exhibit, an exhibit of permanent pasture and forage crops and a poultry exhibit. The 20 bulls were recently purchased in Iowa by the Illionis Central for free distribution among the dairy farmers of its southern territory.

The Transcontinental Air Transport announces that the passenger fare from New York to Los Angeles by the Pennsylvania Railroad, the T. A. T., the Atchison, Topeka & Santa Fe and the T. A. T., has been reduced to $159.92, a reduction of $108.51 from the former rate and a reduction of more than 50 per cent from the rate which was charged when the airplane service was begun in July, 1929. Reductions have also been made in the fares on the T. A. T. routes between all principal cities, the new basis being five cents a mile, less than half the rate formerly charged to passengers.

Thomas P. Healy, who has resigned as director of the Bureau of Inquiry of the Interstate Commerce Commission to engage in the practice of law at Washington, has been retained by the railroads serving New York City to represent them in the defense of the case growing out of a complaint filed by the state of New Jersey asking abolition of the practice of according free lighterage on freight to and from Manhattan Island. The complaint was filed on behalf of New Jersey by J. J. Hickey, who resigned as director of the Bureau of Inquiry three years ago. William H. Bonneville, who has been assistant director of the Bureau, succeeds Mr. Healy as director.

Freight Traffic in November

The freight traffic handled by Class I railroads in the first eleven months of 1929 amounted to 456,131,799,000 net ton-miles, the heaviest traffic for any corresponding period on record, according to reports received by the Bureau of Railway Economics. This was an increase of 7,545,886,000 net ton-miles, or 1.7 per cent, above the previous high record for any corresponding period which was established in 1926.

It also was an increase of 16,618,661,000 net ton-miles, or 3.8 per cent, above the same period in 1928, and an increase of 16,028,739,000 net ton-miles, or 3.6 per cent, above the same eleven months period in 1927.

Railroads in the Eastern district for the eleven months reported an increase of 5.9 per cent, compared with the same period in 1928, while the Southern district reported an increase of one-tenth of one per cent. The Western district reported an increase of 2.3 per cent.

Freight traffic in November amounted to 38,722,528,000 net ton-miles, a reduction of 3,268,925,000 net ton-miles or 7.8 per cent under the same month in 1928, but an increase of 1,472,206,000 net ton-miles, or 4 per cent, above that for November, 1927.

In the Eastern district there was a reduction of 7.7 per cent in November, 1929, compared with the same month in 1928, while the Southern district reported a decrease of 9.8 per cent. The Western district reported a reduction of 7.1 per cent.

The average speed per freight train in November was 13.3 miles per hour, an increase of five-tenths of one mile above that for the same month in 1928. The average movement per car per day was 32.4 miles, a decrease of eight-tenths of a mile below that for November, 1928, but an increase of 2.2 miles above that for November, 1927.

The average load per car in November, 1929, was 27.2 tons, including less than carload freight as well as carload freight. This was a reduction of three-tenths of a ton below that for November, 1928, but was four-tenths of a ton above that for November, 1927.

Service Order for Traffic To Mexico

Because of the closing of the Mexican consulate at Laredo, Tex., and the consequent inability of the railways to move traffic through that gateway, the Interstate Commerce Commission on January 11 issued Service Order No. 50 authorizing and directing the Missouri Pacific, the International-Great Northern, the Texas-Mexican and the Texas & New Orleans to forward freight via Brownsville or Eagle Pass, Tex., in order to expedite its movement and prevent congestion, at the rates applicable at date of shipment via the routes designated unless higher than those over the route of movement.

Allowances to Contract Warehouses Prohibited

The Interstate Commerce Commission has issued a decision finding that the practice of the Baltimore & Ohio, the Pennsylvania and the Reading in making allowances to certain "contract warehouses" at Philadelphia in connection with the loading or unloading of package freight and refusing to make similar allowances to other warehouses, who had complained, for performing similar services, results in unjust discrimination. "The record discloses," the report says, "that these allowances are nothing more than a device to attempt to lend legality to the payment of rebates to the contract warehouses." Defendants are required to cease and desist from publishing or making such allowances and the Pennsylvania and the Baltimore & Ohio are ordered to cancel their tariff provisions which make the facilities offered by the contract warehouses a part of their respective station facilities at Philadelphia.

Foreign

New Central American Rail Link Opened

The new 80-mile line of the International Railways of Central America, running from Zacapa (Guatemala) to a point some ten miles across the border of El Salvador, was formally opened for traffic during the last week of 1929. The opening ceremonies, held on the international bridge spanning the Angiatu river, included speeches by President Pio Romero Bosque, of El Salvador, and by President Lazaro Chacon, of Guatemala, a dinner given by Charles Meyers, vice-president of the International, and formal greetings by dignitaries of both countires, officers of the railway and high officials of other countries.

The new line, built at a cost of $12,000,000, brings the total mileage owned and operated by the International system to 800, and provides the first rail connection between its lines in Guatemala and those in El Salvador. Its construction and economic importance were described in detail in the *Railway Age* of May 25 and July 6, 1929.

Completion of the line from Zacapa will be followed by improvements to the port facilities of the International Railways at Puerto Barrios (Guatemala), on the Atlantic Ocean, which will nearly double the capacity of that port to care for expected coffee and fruit shipments from Salvador. Construction of a second connecting link, from Santa Maria (Guatemala) to Ahuachapan (El Salvador) is under consideration by the International Railways, while an extension of their lines from their present El Salvador terminus at La Union to Chinandega in Nicaragua is also contemplated.

Railways of India in 1928-29

Railways of India for the year ending March 31, 1929, reported composite gross revenues equivalent to approximately $433,869,000, operating expenses equivalent to $272,360,000 and net revenue from operations of $161,508,000, according to the preliminary abstract of statistics recently issued by the Indian Government Railway Board.

The foregoing figures compare respectively with 1927-28 gross revenues of $431,655,000, operating expenses of $264,992,000 and net revenue from operations equivalent to $166,663,000. It will thus be noted that while the 1928-29 gross revenues were $2,214,000 greater than those of 1927-28, operating expenses at the same time increased $7,368,000 and thus brought a decrease of more than $5,000,000 in net. The 1927-28 dollar figures presented herein will not agree exactly with the dollar figures for the same items in the 1927-28 annual review of these Indian railways, published in the *Railway Age* of December 8, 1928, page 1157. The discrepancy is due to the different exchange rate used in converting Indian into American currency figures. In the 1927-28 review a rate slightly above par and prevailing at the time was used, whereas in this article the rupee has been taken at its par value, 36.5 cents.

Because the rise in operating expenses was greater in 1928-29 than was the increase in gross revenues, the composite operating ratio rose from a 1927-28 figure of 61.39 to 62.77 in the past year and the percentage of net revenue to total capital fell from 5.55 in 1927-28 to 5.39 in 1928-29. Capital investment during the year rose approximately $46,000,000 or from $3,003,000,000 to $3,049,000,000. Since the previous report about 1,200 new miles of railway route were opened to bring the total route mileage on March 31, 1929, to 40,950 as against 39,711 on March 31, 1928.

Class I railways (those with annual gross revenues of 50,000,000 rupees or $18,250,000) reported $419,212,000 of $433,869,000 total 1928-29 gross revenues, $259,818,000 of the $272,360,000 total operating expenses and $159,394,000 of the $161,508,000 net. The total 1928-29 gross revenues of Class II roads (those with annual gross revenues of 10,000,000 rupees or $3,650,000) was $12,385,000 while the composite gross of other lines, designated Class III, was $2,168,000.

If the state operated and controlled lines be segregated, the report reveals that these government properties, on March 31, 1928, involved a capital cost of $2,694,837,000; they reported $381,639,000 of the 1928-29 gross and $140,271,000 of the net. This latter, because of increased expenses, was about $3,500,000 less than the composite net revenues reported by the state lines in the previous year.

During the year under review 620,110,000 passengers were carried, a decline of about 3,000,000 from the previous year's figure of 623,114,000. The bulk of this drop in passengers carried is assignable to the decline in the number of third class travelers from a 1927-28 figure of 594,821,000 to a 1928-29 total of 591,742,000. There was, however, a loss of about 57,000 first class and 400,000 second class passengers offset by an increase of about 500,000 travelers designated "inter-class," a rating falling between second and third class. Passenger miles rose in comparison with the previous year to 22,097,136,000 from 21,704,687,000 while gross passenger revenues fell about 9,370,000 rupees or $3,420,000.

Total long tons of freight handled increased from 89,791,000 in 1927-28 to 90,835,000 in 1928-29 while at the same time the net ton-miles fell from 21,902,222,000 to 21,889,177,000. This latter is due to the decrease in the average haul per ton of freight from 243.9 miles in 1927-28 to 241 miles in 1928-29. Gross freight revenues nevertheless increased 37,490,000 rupees or $13,684,000 over the comparable figure for the previous year since the average ton-mile rate in 1928-29 was 6.24 pies (1.19 cents) as against 6.08 pies (1.15 cents) in 1927-28.

Equipment and Supplies

Locomotives

THE NEW YORK CENTRAL has ordered three oil-electric locomotives from the American Locomotive Company and the General Electric Company. These are for service in the LaSalle street terminal, Chicago.

Freight Cars

THE JOHN A. ROEBLING'S SONS COMPANY is inquiring for from one to six bloom cars.

THE GENERAL CHEMICAL COMPANY is inquiring for 15 tank cars of 9,800 gal. capacity to carry sulphuric acid.

THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC is inquiring for 1,000 gondola cars, 48 ft. 6 in. long and of 70 tons' capacity.

THE MISSOURI-KANSAS-TEXAS will build 500 gondola cars in its own shops. Inquiry for this equipment was reported in the *Railway Age* of November 23.

THE STAUFFER CHEMICAL COMPANY has ordered one insulated tank car of 10,000 gal. capacity from the General American Tank Car Corporation.

THE EASTMAN KODAK COMPANY has ordered two tank cars of 8,000 gal. capacity from the General American Tank Car Corporation.

THE SOUTHERN PACIFIC has ordered 300 automobile furniture cars 50 ft. long from the Pressed Steel Car Company and 100 gondola cars from the Ralston Steel Car Company. Inquiry for this equipment was reported in the *Railway Age* of November 23.

Passenger Cars

THE BANGOR & AROOSTOOK is inquiring for 12 sets of steel underframes and 12 sets of trucks for passenger coaches.

THE NEW YORK CENTRAL has ordered 10 dining cars from the Pullman Car & Manufacturing Corporation.

Machinery & Tools

THE NEW YORK CENTRAL has ordered two heavy pattern openside planers from Manning, Maxwell & Moore, Inc.

THE NEW YORK, NEW HAVEN & HARTFORD has ordered one three carriage car axle journal and axle lathe from Manning, Maxwell & Moore, Inc.

Iron & Steel

THE CHICAGO, BURLINGTON & QUINCY has ordered 10,650 tons of rails for the

Colorado & Southern and the Ft. Worth and Denver City from the Colorado Fuel & Iron Company.

THE BALTIMORE & OHIO has ordered 85,000 tons of rail from the following builders: Carnegie Steel Company, 52,000 tons; Bethlehem Steel Company, 22,000 tons; Illinois Steel Company, 6,000 tons, and Inland Steel Company, 5,000 tons.

Signaling

THE NEW YORK, CHICAGO & ST. LOUIS has ordered from the Union Switch & Signal Company material for an electric interlocking at Templeton, Ind.; a 19-lever machine, Model 14; 18 color-light signals, style R, and other material.

THE PENNSYLVANIA has ordered from the Union Switch & Signal Company material for Union continuous cab signals to be fitted to new locomotives now being built; 79 equipments to include automatic train stop apparatus and 41 without.

THE NEW YORK, CHICAGO & ST. LOUIS has ordered from the Union Switch & Signal Company material for the installation of electric interlocking at Altamont, Ind.; model 14 machine, 23 levers; 33 color-light signals, style R, and other material.

THE READING has contracted with the Union Switch & Signal Company for the installation of automatic block signals on its line, double track, between Wayne Junction, Pa., and Jenkintown, six miles. The order includes 47 color-light signals, 17 switch indicators, 46 a.c. track circuits and a new electro-mechanical interlocking machine at Jenkintown.

NEW YORK, NEW HAVEN & HARTFORD.—The Interstate Commerce Commission, Division 6, has approved, with exceptions, the installation of the automatic train-stop device, continuous induction type code system, of the Union Switch & Signal Company on portions of the New Haven and Providence divisions from Shore Line Junction, Conn., to Auburn, R. I., 104.4 miles.

Cab Signals on N. Y. C. Hump Engines

The New York Central has ordered from the General Railway Signal Company cab signals to be installed on four Mallet locomotives used at the eastbound hump yard at DeWitt (Syracuse) N. Y. These cab signals are installed for the purpose of repeating instantly in the cab any change in humping instructions, so as to facilitate operation when fog interferes with the view of wayside signals.

Miscellaneous

THE PENNSYLVANIA plans to go ahead in 1930 with its program of improvements according to a statement authorized by President W. W. Atterbury as follows: "This company expects to spend about $95,000,000 for new equipment, for extensions to and improvements of its property. We believe that business conditions are fundamentally sound, and that the inevitable growth of the country will require increasing transportation facilities and service. It is our task to provide for these needs with confidence in the continued business prosperity of the United States."

THE CANADIAN NATIONAL is asking for bids until 12 o'clock noon February 22, for the construction of a steel car ferry steamer for service in Northumberland strait between Cape Tormentine, New Brunswick, and Port Borden, Prince Edward Island. Delivery of the car ferry is to be made on July 15, 1931. It is to have an over-all length of 324 ft. and a breadth of 59 ft., with a draft under full load of 19 ft. 3 in., and a dead weight capacity of 1,380 tons. It will be equipped with eight boilers supplying steam to three triple expansion engines developing 8,000 indicated horsepower. In addition to ample passenger accommodations there will be a car deck with three tracks which will accommodate 16 freight or eight passenger cars and on the upper deck there will be a capacity for 40 automobiles.

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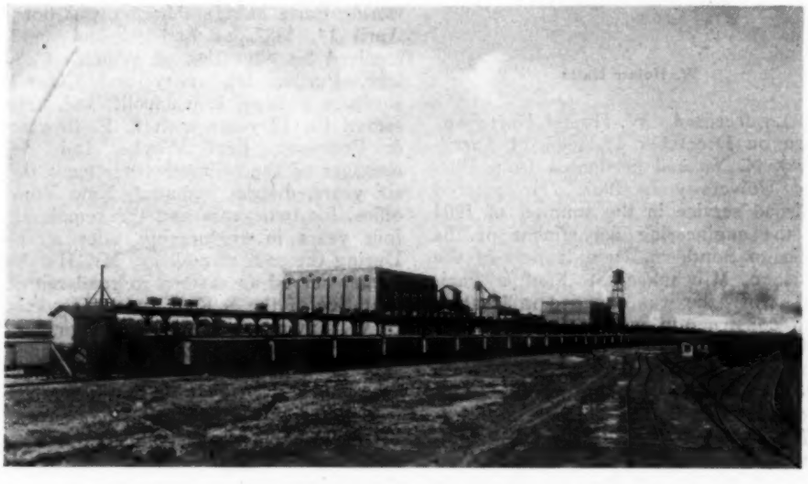

Re-icing Station of the Indiana Harbor Belt at Blue Island, Ill.

Supply Trade

P. G. Jenks, vice-president of the **Standard Steel Car Company,** with headquarters in Chicago, will be transferred to Paris, France, with the same title, to take charge of the extensive interests of this company abroad.

The Louisville Frog Switch & Signal Company has moved its St. Louis, Mo. office to the Missouri Pacific building, 1218 Olive Street. **George W. Bender** has been appointed representative at 819 Dayton avenue, St. Paul, Minn.

H. K. Porter, assistant general sales manager of the **Hyatt Roller Bearing Company,** Newark, N. J., has been appointed general sales manager. He succeeds **H. O. K. Meister,** who was recently promoted to assistant general manager of the company.

Norman C. Naylor, district sales manager of the **American Locomotive Company** and the **Railway Steel Spring Company,** at Chicago, has been appointed vice-president of both companies with headquarters at Chicago. **J. D. Finn,** assistant secretary of the American Locomotive Company has been appointed secretary of the American Locomotive Company succeeding W. Spencer Robertson who resigned to become president of the Permutit Company and **Henry S. Banghart** has been appointed assistant secretary of the American Locomotive Company, both with headquarters at New York.

Verl E. McCoy, combustion engineer of the Chicago, Milwaukee, St. Paul & Pacific has entered the service of the **Bird-Archer Company** as assistant to president (mechanical engineer), with office at 122 South Michigan avenue, Chicago. Mr. McCoy was born on December 17, 1900, at Lincoln, Neb. He was graduated from the Montana State College in mechanical engineering in the class of 1925 and immediately entered the service of the St. Paul as a special apprentice, becoming combustion engineer of that railroad in 1928.

Robert M. Derby has been elected a vice-president of the **Niles-Bement-Pond Company** in charge of its foreign business, with headquarters at New York. The company handles abroad the products of the Niles Tool Works Company, the Pratt & Whitney Company, and the Niles division of the Shepard-Niles Crane & Hoist Corporation. Mr. Derby has been with the Niles-Bement-Pond Company the greater part of his business career, commencing as an apprentice in its shops after receiving his engineering training at the Massachusetts Institute of Technology, in the class of 1901.

L. P. Duggan, special railroad representative, Philadelphia, Pa., of the **Garlock Packing Company,** Palmyra, N. Y., has been appointed district manager

of the Philadelphia branch. Mr. Duggan served from 1904 to 1910 in the stores department of the Chesapeake & Ohio at Richmond, Va., and during the next ten years he was connected with the Philadelphia branch of the Garlock Packing Company, as special railroad representative. From 1920 to 1923 he served with the United States Rubber Company, as railroad representative in Baltimore and in New York territory. Since 1923 he has been with the Garlock Packing Company at the Philadelphia branch as special railroad representative until his appointment as district manager with headquarters at the same place.

C. C. Osterhout, chemical engineer formerly with the Rome Iron Mills, Rome, N. Y., has been appointed manager of sales of the Rome division of the **Wrought Iron Company of America** with headquarters at Lebanon, Pa. Mr. Osterhout was graduated from Cornell University in 1904 and became associated with the Rome Iron Mills in 1911

C. C. Osterhout

as chemist and engineer of tests; in 1925 he was appointed assistant manager of sales and from 1929 to January 1930 was manager of sales. As manager of sales of the Rome division of the Wrought Iron Company of America Mr. Osterhout will have exclusive charge of sales of Rome staybolt and engine bolt irons.

The American Rolling Mill Company, Middletown, Ohio, has enlarged its executive staff by creating the offices of chairman of the board and vice-chairman, in addition to the existing positions. **George M. Verity,** president of the company since 1900 was elected chairman, and **Joseph H. Frantz,** first vice-president for the past 16 years, was elected vice-chairman. Both will remain in active relationship for consultation and general direction of the company's policies. **Charles R. Hook,** vice-president and general manager for the past seven years was elected president, to succeed Mr. Verity; Mr. Hook will retain the duties of general manager. Other appointments include **Calvin Verity,** who has been treasurer and assistant general manager, elected vice-president and assistant general manager; **S. R. Rectanus,** assistant to Calvin Verity, was elected vice-president in charge of operations; **C. W. Davis,** assistant treasurer, was elected treasurer and **E. N. Millan,** chief of construction, was made chief engineer of the company.

Erwin R. Brigham, vice-president and secretary of the **North American Car Corporation,** Chicago, has been elected president to succeed his father, Henry H. Brigham, who died on January 4. **General Robert E. Wood,** president of Sears, Roebuck & Company was elected to the board of directors to fill the position formerly held by Henry H. Brigham. Erwin R. Brigham has been vice-president and secretary and a director of the company for the last ten years. He began work in the purchasing department of the company immediately after the war and has served as head of several of the departments particularly the tank car and poultry car divisions. Mr. Brigham announced that the company would continue its program of expansion and that during the past year it had developed the Frigicar, automatic refrigerator car, increased its fleet of cars and acquired the Live Poultry Transit Company.

W. Homer Hartz, vice-president and manager of sales of the **Morden Frog & Crossing Works,** Chicago, has been elected president to succeed Irving T.

W. Homer Hartz

Hartz, deceased. W. Homer Hartz was born on December 11, 1887, at Tarrytown, N. Y., and graduated from Purdue University in 1907. He entered railroad service in the summer of 1904 in the engineering department of the Chicago Southern, (now a part of the Chicago, Milwaukee, St. Paul & Pacific), where he was engaged in location and construction work. In December, 1906, he was employed on track elevation work for the Pennsylvania and in 1907 entered the employ of the Baltimore & Ohio in the division engineer's office at Cumberland, Md. In the following year he went with the Oliver Iron Mining Company at Mountain Iron, Minn., where he remained until 1909 when he entered the employ of the Chicago, Milwaukee, St. Paul & Pacific in the engineering department at Chicago. In 1911 he became associated with the Morden Frog & Crossing Works as a draftsman and later was promoted to inspector and then to chief clerk and purchasing agent, which position he held until 1915 when he was promoted to secretary. In 1922 he was appointed treasurer and assistant manager of sales, and in December, 1927, vice-president and manager of sales, which position he has held until his recent election.

The S K F Industries, Inc., New York, has reorganized its railroad department and in future all sales, engineering and service matters regarding railroad equipment will be handled direct from its home office. The company has a separate engineering division which devotes all of its time to railroad work. **H. E. Brunner,** chief engineer, will continue to direct the affairs of the railroad

Earle M. Harshbarger

department, as he has done for the past 12 years. **E. M. Harshbarger** who has had charge of sales work in the East now has charge of all sales for the railroad department and **B. W. Taylor,** associated with the engineering department for a long time, will continue to handle railroad engineering and service work. Earle M. Harshbarger was born April 14, 1887, at Ladoga, Ind., and received his education at Wabash College, Purdue University and Central Business College, Indianapolis, Ind. He served for 12 years with S. F. Bowser & Company, Fort Wayne, Ind., as manager of the railroad department for six years, district manager, New York office, for two years and the remaining four years in engineering sales work. During the past three years Mr. Harshbarger served as eastern railroad representative of the S K F Industries, Inc. B. W. Taylor, was born on January 21, 1896, at Versailles, Ky., and was graduated from the University of Pennsylvania in the 1917 class in mechanical engineering. He entered the employ of the Illinois Central in its maintenance of way department and served in the United States Army and also as Lieutenant in the United States Navy.

From 1920 to 1923 he was instructor in mechanical engineering at the University of Pennsylvania and has been with the S K F Industries in its engineering department since 1923, supervising railroad engineering and service work.

Obituary

Arthur N. Gegory, Spanish representative of the General Railway Signal Company died of heart disease on October 6, 1929, while swimming in the Mediterranean Sea near Barcelona, Spain.

Henry H. Brigham, president of the North American Car Corporation, Chicago, died on January 4 in New York. He was born on August 31, 1868, at Sharon, Wis., and began his business career as a telegraph operator and local agent for the Chicago & North Western. From 1893 to 1908, he engaged in commercial railway and industrial traffic service, and in the latter year organized the North American Car Corporation, holding the position of president until his death.

Harry L. Monroe, commercial vice-president of the General Electric Company with headquarters at Chicago, died on January 7, at Dallas, Texas, following a long illness. Mr. Monroe completed 40 years service with the company in September, 1928, six months after his election to the vice-presidency. He was born in Parkersburg, West Virginia, May 9, 1869. He entered the employ of the company in 1888 with the Thomson-Houston company in Chicago. In February of 1890 he was transferred to the railway department and in 1894 was appointed salesman operating out of the Dallas office of the General Electric Company. He was appointed manager of the railway department of the central district in 1905 and eight years later was appointed district salesmanager and later district manager of the central district with offices in Chicago.

William L. Jacoby, president of the Kellog Switchboard & Supply Company, Chicago, died on January 11, of pleurisy. He was born on December 12, 1873, in Bethlehem, Pa., and graduated from Lehigh University in 1892. He began his business career in the same year with R. D. Wood & Co at Camden, N. J., and in the following year entered the employ of the Latrobe Steel & Coupler Company where, after holding various positions, he was elected president. In 1908, he resigned to organize and became president of the Inter-Ocean Steel Company, while in 1911, he became engineer for Daniel C. Reid. In the following year he was elected president of the American District Telegraph Company, which position he held until 1918 when he resigned to become vice-president of A. G. Becker & Co He held this position until 1927, when he was made president of the Kellog Switchboard & Supply Company, which position he was holding at the time of his death.

Construction

ATCHISON, TOPEKA & SANTA FE.—List and Weatherly, Kansas City, Mo., were awarded the contract for the erection of an 84-ft. steel truss and concrete viaduct to carry West Wilson street, Ottawa, Kan., over the tracks. The railroad and Franklin county will share the cost of the structure, which is approximately $25,000.

BALTIMORE & OHIO CHICAGO TERMINAL.—This company has informed the Chicago city council that it plans the construction of a street subway under its tracks at Eighty-third street, Chicago, just west of Western avenue, at a cost of $80,000.

CANADIAN NATIONAL.—A contract has been let to the Northern Construction Company and J. W. Stewart for the construction of timber pier sheds at Vancouver, B. C. The total cost of this project is estimated at $900,000.

CHESAPEAKE & OHIO (Levisa River).—A contract for the construction of a line from Millard, Ky., eastward to the Kentucky-Virginia state line, about 28 miles, has been let to Langhorne & Langhorne, Huntington, W. Va. The total cost of the extension is estimated at $4,804,000.

ELIZABETH SOUTHERN.—Examiner W. T. Wilkinson, of the Interstate Commerce Commission, in a proposed report recommends that the Commission deny this company's application for authority to build a line from Elizabeth to Kinder, La., 30.5 miles.

GRAND TRUNK WESTERN.—A contract has been awarded to the E. E. Gillen Company, Milwaukee, Wis., for dredging a car ferry slip and the construction of various timber and concrete decks and docks at Muskegon, Mich.

GULF COAST LINES (St. Louis, Brownsville & Mexico).—A contract for the construction of a one-story brick, reinforced concrete and stucco passenger station at Weslaco, Tex., has been awarded to Walter F. Chambers, San Benito, Tex.

GULF, COLORADO & SANTA FE.—A contract has been awarded to Robert E. McKee, El Paso, Tex., for the construction of a one-story outbound freight house and the extension of the present inbound freight house at Dallas, Tex. The outbound freight house will be constructed of brick and reinforced concrete and will have outside dimensions of 40 ft. by 300 ft. with a covered concrete platform 40 ft. by 120 ft., while the addition will be 60 ft. by 200 ft. with a platform 8 ft. by 200 ft. Bids were closed on January 10 for the construction of two warehouses and a storehouse at Cleburne, Tex.

GULF & WEST TEXAS.—The Interstate Commerce Commission has issued a certificate authorizing the construction of a line from Fredericksburg to Brady, Tex., 69 miles, and from Eden to San Angelo, Tex., 44 miles, on condition that the certificate shall not become effective as to the line from Eden to San Angelo unless and until the G. & W. T. files an appropriate application and receives authority to operate over the line of the Gulf, Colorado & Santa Fe between Brady and Eden or to construct a new line between Brady and Eden. The company proposes to operate from San Antonio to Fredricksburg Junction, 49 miles, over the line of the San Antonio & Aransas Pass and from Fredricksburg Junction to Fredericksburg, 24 miles, over the line of the Fredericksburg & Northern, which it expects to purchase.

KANSAS CITY TERMINAL.—This company contemplates the construction of a steel and concrete viaduct 58 ft. wide to carry Oak street in Kansas City, Mo., over the terminal tracks. The structure will cost about $400,000.

LONG ISLAND.—The Public Service Commission of New York has directed the elimination of the Main street crossing of this company's tracks at Smithtown, N. Y., by carrying the street under the grade of the tracks in an underpass 46 ft. wide between abutments. The estimated cost of elimination is about $190,000.

MAINE CENTRAL.—Contracts have been awarded to the American Bridge Company, Ambridge, Pa., for the construction of a new 110-ft. turntable at Waterville, Me., at an estimated cost of $55,000, and to the McClintic-Marshall Company, Pittsburgh, Pa., for steel for strengthening Frankenstein trestle at Crawford Notch, N. H., at a probable cost of $75,000. It was reported in the *Railway Age* of December 28 that bids were being received for both of these projects.

MISSOURI PACIFIC.—This company has asked the Missouri Public Service Commission for authority to construct highway viaducts over its tracks at Meramec Station road and at Didian avenue, Valley Park, Mo.

MISSOURI PACIFIC.—A contract has been awarded the Roberts & Schaefer Company for the furnishing and erection of a multiple-track "N. & W." type electric cinder handling plant which is now being built at Atchison, Kan.

NEW YORK CENTRAL.—The Public Service Commission of New York has approved specifications and estimates of cost totaling $45,700 for the elimination of Boxart street crossing in Rochester, N. Y.

NEW YORK, NEW HAVEN & HARTFORD.—During 1930, this company plans to spend approximately $11,500,000 on improvements to equipment and permanent facilities. The principal items of construction expenditure are as follows: $2,900,000 for improved roadway, including additional 130-lb. rail and stone ballast, with the accompanying track fittings; $975,000 for

improved and additional shop, power plant and steamboat facilities, and $1,650,000 for miscellaneous improvements to main line facilities.

OKLAHOMA CITY - ADA - ATOKA.—This company has applied to the Interstate Commerce Commission for authority to construct an extension of 7 miles southwest from Marion, Okla.

PENNSYLVANIA.—Elimination of a grade crossing at Ayer street, Montour Falls, N. Y., by carrying the street over the tracks north of the present crossing at a probable cost of $197,100, has been directed by the Public Service Commission of New York.

PENNSYLVANIA.—Contracts have been awarded to the Deakman-Wells Company, Jersey City, N. J., for the construction of a hog storage building at Jersey City, at a probable cost of $136,000, and for alterations and additions to the hog abattoir at Jersey City, at an estimated cost of $127,000.

ST. LOUIS, MO.—This city has prepared plans for the elimination of the double grade crossing of the Chicago, Burlington & Quincy at Union and Lindell boulevards and for depressing the Wabash tracks through Forest Park.

ST. LOUIS-SAN FRANCISCO.—A contract for the construction of a reinforced concrete and steel underpass at the St. Louis-San Francisco tracks, on Peoria avenue at Archer street in Tulsa, Okla., has been awarded to Reid & Lowe, Birmingham, Ala. The cost, $38,121, is being borne by the city and the railway. Bids were opened in Tulsa on January 4 for the construction of a reinforced concrete viaduct over the St. Louis-San Francisco tracks at Cincinnati avenue. It will be 720 ft. long and 41 ft. wide, with one sidewalk 4 ft. 6 in. and another 10 ft. 6 in.

ST. LOUIS SOUTHWESTERN.—Plans for the reconstruction of a bridge across the St. Francis river near St. Francis, Ark., have been approved by the War Department.

SOUTHERN PACIFIC.—A contract for lowering 12,000 ft. of track 3 ft. at Houston, Tex., between McGowan and Yupon avenues, has been let to C. K. Horton, Houston, at a cost of about $55,000. A contract for the construction of a one-story reinforced concrete freight and passenger station at Orange avenue, Burbank, Cal., has been awarded to L. R. Armstrong, Los Angeles, Cal., at a cost of approximately $50,000.

TEMISKAMING & NORTHERN ONTARIO.—Premier G. Howard Ferguson of Ontario last week announced in Toronto the intention of the Ontario Government to extend the Temiskaming & Northern Ontario Railway, owned and operated by the government, as far as Blacksmith Rapids and Moose Factory on James Bay this year.

The line from Coral Rapids, present northerly terminus, to Blacksmith Rapids, heart of the great new lignite coal field —a distance of some 30 miles—will be started as soon as weather conditions permit and will be completed this summer. The road will then be pushed on toward James Bay, with the hope that Moose Factory can be reached by the end of the year. A complete link-up with this ocean port is, in any event, assured for 1930.

Mr. Ferguson announced that complete details of the two projects would be decided at a conference which he and his government will hold with officers and engineers of the railway in Toronto within the next few days.

TEXAS & PACIFIC.—A contract has been awarded to Robert E. McKee, El Paso, Tex., for the construction of a 23-stall roundhouse and other terminal facilities at Big Spring, Tex.

UNION PACIFIC.—This company closes bids on January 20 for the construction of a four-story and basement passenger station at Omaha, Neb., comprising its portion of the new union station facilities in that city. The building, which will be constructed of reinforced concrete, steel and terra cotta, will have outside dimensions of 86 ft. by 404 ft.

UNION PACIFIC.—This company contemplates the construction of a freight station, loading docks and additional sidings at Hays, Kan., to cost $150,000.

YATES & WEST TEXAS.—The Interstate Commerce Commission has denied authority to this company to construct a line from Rankin, Tex., to Sheffield, approximately 43 miles.

Canadian National to Build New Station

The Canadian National has awarded a contract to the Pigott Construction Company for the erection of a passenger station at Hamilton, Ont., to replace the present Stuart street station. The new building, 83 ft. by 189 ft. and three stories high, will be of concrete and stone construction, while the interior will be finished in marble. The station is to extend easterly from James street on the south side of the railroad tracks, with the ground floor some 20 ft. above track level and a concourse 60 ft. by 130 ft. extending to the north over the railroad tracks and connected with train platforms by stairways and ramps. Work will be begun immediately, and will be completed by February, 1931.

Excavation and grading along the cut, through which the railroad tracks run at this point, for the preparation of the station site has been carried out by the Huffman construction Company, Toronto, Ont., under a contract with the Canadian National reported in the *Railway Age* of July 21, 1928. The same company has also built bridges to carry Bay, James, John and Catherine streets across the railway tracks. Additional bridges are being built by the city of Hamilton to carry Mary and Macnab streets across the tracks. Campbell & Lavelle, Toronto, Ont., were the contractors for the substructures of these two bridges.

Financial

CARROLLTON RAILROAD.—*Incorporation.*—Articles of incorporation were filed with the secretary of state at Frankfort, Ky., on December 31, seeking permission to operate a railroad from Carrollton to Worthville by Sidney Smith, J. C. Michael, J. J. Elier, John M. Scott, S. V. Scott, J. F. Davis and M. T. Hastings.

CHESAPEAKE & OHIO.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $35,088,000 of refunding and improvement mortgage 4½ per cent bonds, series B. The issue will mature in 1995 and will be redeemable by the company on any interest date to maturity at a premium ranging from 10 per cent down to 2½ per cent. The issue is to be sold to J. P. Morgan & Co., at 91.5, which will make the annual cost to the railroad 4.938 per cent. A syndicate composed of J. P. Morgan & Co., Kuhn Loeb & Co., First National Bank, National City Company and the Guaranty Company of New York, have offered this issue at 94, to yield 4.8 per cent.

CLEVELAND UNION TERMINAL.—*Bonds.*—The Interstate Commerce Commission has authorized this company to issue $18,000,000 of its 4½ per cent first mortgage sinking fund bonds, series C. The issue will mature in 1977 and will be redeemable subject to the operation of a sinking fund, after 1933, at 105. The company proposes to sell the bonds at not less than 92, which would make the cost to it 4.937 per cent. The commission, however, authorizes their sale at not less than 96, which would make the cost to the company 4.71 per cent. The issue will be guaranteed by the New York Central, the Cleveland, Cincinnati, Chicago & St. Louis and the New York, Chicago & St. Louis and it is on the basis of this security that the commission judged the price of 92 to be too low. Commissioner Eastman concurred in the decision with the reservation that he believed the issue should be sold by competitive bidding.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—*Abandonment.*—Examiner Weed of the Interstate Commerce Commission has submitted a proposed report recommending that the commission authorize the abandonment of a line of 27.46 miles in Aitkin and Crow Wing counties, Minn., and 4.85 miles of the Iron Mountain branch, in Crow Wing county.

NEW YORK CENTRAL.—*Consolidation.*—The Interstate Commerce Commission has filed an answer in the federal court at New York, to the suit of the minority stockholders in the Cleveland, Cincinnati, Chicago & St. Louis to restrain the leasing of that company to the New York Central.

NEW YORK, NEW HAVEN & HARTFORD.—*Final Valuation.*—The final value for rate-

making purposes of the property owned and used for common-carrier purposes as of 1915 is placed at $256,400,000 in the final valuation report issued by the Interstate Commerce Commission. The value of the property used but not owned was found to be $120,615,724 and that of the property owned but not used $3,516,650. The figure for property owned and used includes $4,650,000 for working capital. The original cost to date could not be ascertained. Its books record an investment of $195,505,843 in road and equipment, including lands and rights, which, if adjusted in accordance with the accounting examinations, would be increased to $197,670,038, the report says. This includes $72,633,580, less an undetermined portion assignable to offsetting items recorded at $20,795,425, of par value of securities issued, assumed, or surrendered, the cash value of which at the time of entry upon the books cannot be ascertained. The portion of the investment representing the cost of lands and rights has not been definitely determined. The carrier had protested that the investment figure should be not less than $232,675,453. The cost of reproduction new of the property owned and used, exclusive of lands and rights and material and supplies, was found to be $241,665,720, and the cost of reproduction less depreciation, $184,615,712; for property used but not owned, $95,871,306 and $78,517,972, respectively. The value of lands and rights owned and used for common-carrier purposes on date of valuation, determined in conformity with the usual methods, is placed at $53,804,886; used but not owned, $38,551,811. The carrier had protested the omission from the tentative valuation of the value it alleged to be assignable to it of the terminal property in New York City, contending that the value of the rights in perpetuity to the use of this property is $55,490,531. The commission in the final report, however, sustained this omission, saying that to report it for the purpose of rate-making either as property owned and used or used but not owned by the company would result in duplication. "The right to use these extensive terminal facilities," the report says, "is a commercially valuable contract right owned by the carrier, and this joint use thereof is also a valuable asset to the owning company. But for the purpose of ascertaining the value, for rate-making purposes, of the carrier's property owned or used in common-carrier service, no specific value will be reported for the right of the carrier to the use of this property."

OKLAHOMA CITY-ADA-ATOKA.—*Acquisition.*—This company has applied to the Interstate Commerce Commission for authority to acquire control by purchase of stock of the Oklahoma City-Shawnee Interurban Railway.

PENNSYLVANIA.—*Lease of West Jersey & Seashore.*—The board of directors of the West Jersey & Seashore, which is controlled by the Pennsylvania through stock ownership, has appointed a committee to consider the lease of its property and franchises to the parent company.

PENNSYLVANIA. — *Acquisition.* — This company and the Pittsburgh, Cincinnati, Chicago & St. Louis have applied to the Interstate Commerce Commission for authority for the acquisition and operation of the line of the St. Louis Connecting between St. Jacob and Collingsville, Ill., and for authority to abandon 2.77 miles of the old line between those points.

SEABOARD AIR LINE.—*Recapitalization.*—This company has announced that its refinancing plan has been consummated and that it has received more than $20,000,000 in cash from the sale of common stock at $12 a share under the plan. The company is utilizing this fund to pay off bank loans amounting to $3,000,000 and a $2,000,000 note to the director general of railroads. The plan reduces the company's debt by $15,000,000, in addition to the $5,000,000 paid off in cash and puts it in funds for all necessary corporate purposes.

TEMISKAMING & NORTHERN ONTARIO.—*Annual Report.*—In the report of this company (owned by the Ontario government) for the fiscal year ended October 31, 1929, George W. Lee, chairman of the T. & N. O. Commission states that gross revenue from all sources in 1929 showed a decrease of $368,975, as compared with 1928, and gross expenditure, a decrease of $193,726, resulting in a decreased net operating revenue of $175,249.29 as compared with the preceding fiscal year. "This decrease in operating volume in 1929," states Mr. Lee, "was directly attributable to the gradual but general slackening of business conditions throughout the country, which, in common with other railroads, was necessarily reflected in the earnings of the T. & N. O. Railway. The consequent reduced freight and passenger traffic is, in our opinion, not an indication of permanent retrogression of the affairs of the Northern country served by the T. & N. O. Railway, but shows an adjustment of business conditions preceding a general advancement in all lines of endeavor in the near future as the conditions of the territory, as a whole, enlarge and expand." During the year under review the Commission paid the sum of $240,000 to provide for matured interest on its debenture bond issue of $6,000,000, and carried insurance against loss by fire in the sum of $3,400,000. It also maintained the policy it inaugurated in 1928 of carrying relief to settlers by extensive purchasing of railway ties for present and immediate future requirements.

WABASH.—*Dividend.*—As a result of the United States Supreme Court's decision permitting this company to pay dividends on junior stock in spite of the fact that some dividends have in previous years been omitted on Class A noncumulative preferred stock, the company has declared a $5 dividend on the Class B preferred for 1929 and has re-declared a $5 dividend for 1928, which dividend was suspended a year ago following an adverse decision of a lower court. The regular quarterly dividend of $1.25 was also declared on the Class A. preferred.

Dividends Declared

Atchison, Topeka & Santa Fe.—Common, 2½ per cent, quarterly, payable March 1 to holders of record January 31.

Nashville, Chattanooga & St. Louis.—$3.50, semi-annually; Extra, $1.00, payable February 3 to holders of record January 25.

Wabash.—Preferred A, 1¾ per cent, payable February 25 to holders of record January 25; Preferred B (for year 1929), 5 per cent, payable February 6 to holders of record January 21; Preferred B (for year 1928), 5 per cent, payable February 6 to holders of record December 31, 1928.

Western New York & Pennsylvania.—Common, $2; Preferred, $2.50, both payable January 31 to holders of record January 30.

Average Prices of Stocks and of Bonds

	Jan. 14	Last week	Last year
Average price of 20 representative railway stocks.	128.98	126.94	130.43
Average price of 20 representative railway bonds..	93.26	92.90	92.59

* * * *

Eastbound on the Pennsylvania at East Liberty, Pa.

Railway Officers

Nuelle Heads N. Y. O. & W., Succeeding Kerr

Joseph Henry Nuelle, vice-president and general manager of the New York, Ontario & Western, with headquarters at Middletown, N. Y., has been appointed president with headquarters at New York, succeeding John B Kerr, who has retired, as mentioned in the *Railway Age* of January 4, 1930. Mr. Nuelle was born in Chicago on April 9, 1881. He was educated at Phillips Exeter Academy and Princeton University, and entered railroad service in 1907 as a rodman for the Pennsylvania. A year later he entered the service of the New York, Ontario & Western as assistant engineer. From that position he was appointed engineer maintenance of way in 1912; chief engineer, 1913; assistant general superintendent, 1915; general superintendent, 1916; federal manager, 1918, and general manager, 1920. In 1923 he was appointed vice-president and general manager, which position he held until his recent appointment as president.

John B. Kerr, who has retired as president, was born at Newburgh, N. Y., on February 1, 1851. He was educated in the public schools and after studying law in the office of E. A. Brewster, Newburgh, N. Y., was admitted to the New York bar in 1872. He practiced law until 1882, when he removed to New York and became attorney for the New York, Ontario & Western. He was later elected vice-president and general counsel of the same road and, in September, 1913, he was elected president, in which capacity he served until his retirement from that position in December.

Executive

R. S. Marshall, vice-president of the Chesapeake & Ohio and the Hocking Valley, with headquarters at Cleveland, Ohio, has also been elected vice-president of the Pere Marquette.

Einar Olsen has been appointed vice-president and general manager of the Coahuila & Zacatecas, with headquarters at Saltillo, Coah., succeeding **L D. Fry,** who has resigned.

W. W. Sullivan, assistant to the president of the Chicago Great Western, with headquarters at Chicago, has resigned and the position has been abolished.

H. H. Melanson, general passenger traffic manager of the Canadian National, with headquarters at Montreal, has been appointed assistant traffic vice-president, with the same headquarters. Mr. Melanson brings to his new executive position long railway experience. He entered the service of the Intercolonial at Moncton, N. B., in 1889, as assistant to the junior clerk in the mechanical department. After becoming general baggage agent, Mr. Melanson was made assistant general passenger agent of the same road in 1909, and general passenger agent in 1913. In 1917 he was appointed passenger traffic manager of the Canadian Government Railways, and a year later passenger traffic manager of the Canadian National. This position he held until his appointment in 1923 as general passenger traffic manager. Mr. Melanson is also president of the American Association of Passenger Traffic Officers.

H. H. Melanson

Willard F. Place, assistant to vice-president of the New York Central, with headquarters at New York, has been appointed assistant vice-president, finance and corporate relations, with the same headquarters. Mr. Place, a Cornell graduate, has been with the railroad since 1925, first as office assistant to the vice-president of finance and corporate relations and later as assistant to him.

Financial, Legal and Accounting

Thomas E King, attorney for the Atchison, Topeka & Santa Fe at Chicago, has been appointed commerce attorney at the same point, succeeding **Gerald E. Duffy,** who has been transferred to San Francisco, Cal.

The titles of **J. Welch,** assistant secretary, and **L. G. Weiffenbach,** assistant treasurer, of the Chicago, Milwaukee, St. Paul & Pacific, both with headquarters at Chicago, have been changed to assistant secretary-assistant treasurer.

R. E. Wiley, assistant general attorney of the Missouri Pacific at Little Rock, Ark., has been promoted to general attorney, with headquarters at the same point, succeeding **E. B. Kinsworthy,** who has retired from active service under the pension rules of the company.

Archibald Davis Daniel, passenger traffic manager of the Atlanta, Birmingham & Coast, with headquarters at Atlanta, Ga., has been appointed auditor, with the same headquarters. Mr. Daniel was born in Halifax, N. C., on June 9, 1884. He attended the Warrenton, N. C., high school, and entered railroad service on August 1, 1902 with the Atlantic Coast Line. From that date, to 1908, he was a stenographer in the offices of the general passenger agent, Wilmington, N. C., the superintendent of transportation, Wilmington, N. C., and the commercial agent at Jacksonville, Fla., secretary to division passenger agent, Savannah, Ga., secretary to the superintendent of transportation, Jacksonville, Fla., and chief clerk to the superintendent, Sanford, Fla., and the passenger agent at Washington, D. C. In 1908 he entered the service of the Sanford & Everglades (now a part of the Atlantic Coast Line) as chief clerk to general manager. From October 1, 1909 to May 15, 1917 he served as passenger agent and traveling passenger agent for the Atlanta, Birmingham & Atlantic (now a part of the Atlanta, Birmingham & Coast). After serving in the war from May, 1917, to July, 1919, as an officer of engineers, he became connected with the Atlanta, Birmingham & Coast, with which road he has held the positions of passenger agent, (1919), purchasing agent, (1919-1923), and passenger traffic manager, (1923-1929).

Archibald Davis Daniel

Operating

J. J. Jones has been appointed supervisor of stations of the Pere Marquette, with headquarters at Detroit, Mich.

J. E. Rhodes has been appointed supervisor of stations of the Chicago Great Western, with headquarters at Oelwein, Iowa.

F. R. Callahan, supervisor of railroad repairs of the Pullman Company, has been appointed superintendent of yards, with headquarters as before at Chicago.

F. W. Cantrell, chief train dispatcher on the Southern Pacific at Portland, Ore., has been promoted to trainmaster of the Portland division with headquarters at Roseburg, Ore.

H. E. McMullen has been appointed superintendent of the El Paso-Amarillo division of the Chicago, Rock Island & Pacific, with headquarters at Dalhart, Tex., succeeding **H. P. Greenough,** retired.

Edwin D. Jones, acting superintendent of the Stevens Point division of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Stevens Point, Wis., has been appointed superintendent.

J. J. Brinkworth, division superintendent of the New York Central with headquarters at Columbus, O., has been appointed to a similar position on the Buffalo division, succeeding **W. A. Hamler,** who has been transferred to the Pennsylvania division, in the same capacity.

H. T. Coleman, assistant manager of mail, baggage and express traffic of the Illinois Central, with headquarters at Chicago, has been appointed acting manager of mail, baggage and express traffic, with headquarters in Chicago, to succeed **H. C. Fairchild** who has been granted a leave of absence.

H. N. Sails, night assistant trainmaster of the Kansas City division of the Atchison, Topeka & Santa Fe, has been promoted to night trainmaster, with headquarters as before at Argentine, Kan. **W. G. Post** has been appointed night assistant trainmaster of the Kansas City division to succeed Mr. Sails.

J. Ivan MacKay, assistant to the general superintendent of the British Columbia district of the Canadian Pacific, with headquarters at Vancouver, B. C., has been promoted to superintendent of the Nelson division, with headquarters at Nelson, B. C., succeeding **P. Armstrong,** retired, and has been succeeded by **G. H. Baille,** chief clerk to the vice-president at Winnipeg, Man.

Dewey Weldon, assistant general yardmaster on the Pennsylvania at Cleveland, Ohio, has been promoted to assistant trainmaster on the Wheeling division, replacing **D. M. Donachy,** who has been transferred to the Cleveland division, where he succeeds **P. C. Adams,** who has been transferred to the Pittsburgh division. **M. G. Schoch,** general yardmaster on the Buffalo division, has been promoted to assistant trainmaster on the same division.

J. C. Garcia, superintendent of the Guadalajara division of the National of Mexico, with headquarters at Guadalajara, Jal., who was granted a leave of absence in November, has returned to this position. **J. G. Alvarado,** trainmaster of the Aguascalientes division at Aguascalientes, Aguas, who was granted a leave of absence in November, has returned to this position. **M. Palaciose Acosta,** who relieved Mr. Alvarado, has re-assumed the duties of trainmaster of the Aguascalientes division with headquarters at Irapuato, Gto. **H. T. Cordero,** has been appointed trainmaster of the Monclova division, with headquarters at Monclova, Coah.

F. L. Myers, assistant general manager of the Southern district of the Atchison, Topeka & Santa Fe, with headquarters at Amarillo, Tex., who has been on leave of absence since July, 1929, resumed his duties on January 1, succeeding **J. B. Briscoe,** acting assistant general manager, who returns to his former position of superintendent of the Plains division, with headquarters at the same point. **C. S. Cravens,** acting superintendent of the Plains division, has been transferred to the Pecos division, with headquarters at Clovis, N. M., succeeding **C. E. Smyer,** who has been transferred to the Arkansas River division replacing **J. R. Skillen,** who has been assigned to other duties.

Howard Ginter, who has been appointed superintendent of passenger transportation in the western region of the Pennsylvania, with headquarters at Chicago, entered the employ of the Pennsylvania in April, 1909, at Conemaugh, Pa., as track superviser's clerk in the maintenance of way department. He remained in this position until July, 1918, when he was appointed a clerk to the superintendent at Pittsburgh. Later he was appointed chief clerk to the master mechanic, maintenance of way department, following which he

Howard Ginter

was transferred to the general superintendent's office at Cleveland, where he was made assistant chief clerk. After three years in this position, he became chief clerk, in 1923. Five years later he was transferred to Pittsburgh, where he was chief clerk to the vice-president, which position he has held until his recent promotion.

Hugh P. Greenough, superintendent of the El Paso-Amarillo division of the Chicago, Rock Island & Pacific, with headquarters at Dalhart, Tex., retired from active duty on December 31, after 54 years of service with that railroad. Mr. Greenough was born on March 26, 1858, at Galva, Ill., and entered railway service in 1876 as a telegrapher on the Rock Island & Peoria (now part of the Rock Island) at Galva. He then advanced through the positions of dispatcher, chief clerk, trainmaster, superintendent and vice-president, and when the Rock Island & Peoria was taken over by the Rock Island in 1902 he was appointed assistant superintendent of the Illinois division of the latter road. During the same year, he became superintendent at Amarillo, Tex., then being transferred to the Cedar Rapids division at Cedar Rapids, Iowa, in February, 1904. From May, 1907, to the date of his retirement, Mr. Greenough served successively as superintendent of the El Paso division, the Iowa division, the Illinois division and the El Paso-Amarillo division.

Charles E. Adams, who has been promoted to superintendent of the Grand Rapids division of the Pennsylvania, with headquarters at Grand Rapids, Mich., entered the employ of this road in 1907, although while attending Ohio State University he worked three summers as a crossing watchman at Ham-

Chas. E. Adams

ilton, Ohio. In 1907, he became a yard clerk and a year later was transferred to the Richmond division to be an assistant in the engineer's corps. In 1914, he was transferred to the Cincinnati division and later to Akron, Ohio, where he worked for the next four years, becoming supervisor in 1920. Three years later he was transferred to the Buffalo division where he remained until 1926, when he was made supervisor on the Eastern division. From this position, two years later, he was made division engineer of the St. Louis division. Less than a year after that

he was transferred to Philadelphia as terminal engineer, which position he has held until his recent promotion.

Harry S. Phillips, who has been appointed superintendent of the St. Louis Southwestern lines of Texas, with headquarters at Tyler, Tex., was born on September 29, 1882, at Marshall, Tex. He entered railway service on September 23, 1900, as a station helper for the St. Louis Southwestern of Texas at Plano, Tex., and on May 20, 1901, was promoted to agent at Murphy. In August of that year he resigned to enter the station service of the Houston & Texas Central at Ft. Worth, which position he held until May, 1902, when he entered the auditors' office of the Chicago, Rock Island & Pacific in the same city. After serving in the chief engineer's office of the Chicago, Rock Island & Gulf at Ft. Worth from June, 1903, to December 1, 1904, and as chief clerk to the division superintendent of this road at Dalhart from the latter date

Harry S. Phillips

to October 1, 1905, he was employed as brakeman, conductor and trainmaster on construction until May 1, 1907, when he entered the employ of the Ft. Worth & Denver City. He worked as a brakeman and conductor at Wichita Falls, Tex., until February 1, 1908, when he was appointed claim agent of the Chicago, Rock Island & Pacific at Ft. Worth, which position he held until October 1, 1910, when he resigned to become general superintendent of the Abilene & Southern at Abilene, Tex. During his war service, which extended from July 16, 1917, to July 19, 1919, he was a captain and a major with the engineering division of the American Expeditionary Forces in France, being engaged in the operation and construction of light railways. After the war and until September 1, 1921, he was a drilling contractor and oil operator in the Breckenridge and Ranger Fields. On the latter date he was appointed superintendent of the fuel properties of the Texas & Brazos Valley at Mexia, Tex., which position he held until August 1, 1922, when he again entered the employ of the St. Louis Southwestern as a special accountant for the executive vice-president. On July 8, 1923, he was made superintendent of personnel and safety with headquarters at Tyler, Tex., which position he has held until his recent appointment.

Traffic

L. A. Hoffman has been appointed general agent of the freight department of the Missouri Pacific at Cape Girardeau, Mo.

R. S. Eaton, traveling freight agent of the New York, New Haven & Hartford, with headquarters at Chicago, Ill., has been appointed general agent with headquarters at Detroit, Mich.

Henry E. McElroy, traffic agent for the Chicago Great Western at Pittsburgh, Pa., has been promoted to general agent at Atlanta, Ga., a newly created position.

Elvin W. Woodworth, traffic agent of the Chicago Great Western at Boston, Mass., has been promoted to general agent with headquarters at the same point.

The headquarters of **I. J. McRoberts**, general passenger agent of the Wheeling & Lake Erie, have been removed from Cleveland, Ohio, to Canton.

E. B. Wood traveling freight agent for the Pere Marquette at St. Louis, Mo., has been promoted to Southwestern freight agent, with headquarters at the same point, succeeding **Frank T. Byrne**, deceased.

Albert A. Gardiner, general passenger agent with jurisdiction in respect to trans-Atlantic and trans-Pacific passenger traffic of the Canadian National System, with headquarters at Montreal, has been appointed assistant general

Albert A. Gardiner

passenger traffic manager, with the same headquarters. Mr. Gardiner entered the service of the Grand Trunk in 1907 as a clerk. He became chief clerk in the passenger department in 1910, and chief clerk in the passenger traffic manager's office in 1920, and in 1923 he was attached to the office of executive assistant to the vice-president. In 1926 he was appointed general passenger agent, the position he held until his recent appointment.

T. A. K. Fassett, assistant general baggage agent of the Southern Pacific, has been promoted to general baggage agent, with headquarters as before at San Francisco, Cal., succeeding **E. B. Carson**, who retired from active duty on December 1 after 48 years with that company, 30 years of which were as general baggage agent. **C. G. Sheffield** has been appointed assistant general baggage agent to succeed Mr. Fassett.

Frederick W. Thompson, general agent of the Chicago, Rock Island & Pacific, with headquarters at San Francisco, Cal., has retired and the position has been abolished. **E. A. Groves**, assistant general freight agent, with headquarters at Chicago, has been appointed general freight agent, with headquarters at San Francisco, having charge over all freight traffic matters in Pacific coast territories, and is succeeded by **J. B. Rayn**, assistant general freight agent at Des Moines, Ia., who in turn is succeeded by **R. I. Colvin**, division freight agent at Peoria, Ill. **V. L. McVay**, traveling freight agent at Des Moines, succeeds Mr. Colvin.

G. H. Logan, assistant general freight agent of the Colorado & Southern, with headquarters at Denver, Colo., has been promoted to general freight and passenger agent, with the same headquar-

G. H. Logan

ters, and has been succeeded by **F. F. Crabbe**, chief clerk to the traffic manager at Denver. **G. R. Glover**, chief of the tariff bureau at Denver has been promoted to assistant general freight agent at Denver. Mr. Logan began his railroad career with the Missouri Pacific in 1884, serving as clerk, telegraph operator, agent and traveling accountant. He served as a major of volunteers in the Spanish American War, both in the United States and Cuba. After being mustered out of the Army, he entered the employ of the Colorado & Southern in 1899, as an agent, later becoming traveling freight

agent, and general agent. In 1927 he was promoted to assistant general freight agent, which position he has held until his recent promotion.

Guy Thomas Pettigrew, general freight agent of the Grand Trunk Western lines of the Canadian National, with headquarters at Detroit, Mich., has been appointed assistant general freight traffic manager of the Canadian National, with headquarters at Montreal. Mr. Pettigrew was born at Sorel, Que., on March 6, 1874, and entered railway service as an apprentice with the traffic department of the Canadian National in Montreal, Que., on May 1, 1888.

Guy Thomas Pettigrew

Four years later, he was made clerk, and in 1905 became chief clerk. In 1907 he was named division freight agent at Stratford, Ontario, a position he held until he was transferred to Montreal in 1911 to serve in a similar capacity. In July, 1923, he was appointed freight traffic representative of the amalgamated Canadian National Railways at New York, and in October of the same year he returned to Montreal as tariff inspector. Mr. Pettigrew was appointed division freight agent at Montreal in 1925, and general freight agent, Canadian National-Grand Trunk System, at Detroit, in 1928.

Thomas Robertson Bryan has been appointed general passenger agent of the Atlanta, Birmingham & Coast, with headquarters at Atlanta, Ga. Mr. Bryan attended the Jonesboro, N. C., high school and entered railroad service on March 1, 1901, with the Atlantic Coast Line. From that date to January, 1908, he served as stenographer, and rate and division clerk in the office of the general passenger agent, at Wilmington, N. C. From January to June, 1908, he was a passenger rate clerk in the office of the Southeastern Passenger Association at Atlanta, Ga. After June, 1908, he served as rate and division clerk with the Associated Railways of Virginia and the Carolinas, at Richmond, Va., and in May, 1909, took a similar position in the office of the general passenger agent of the Seaboard Air Line at Norfolk, Va. In November, 1913, he became connected with the Atlantic, Birmingham & Atlantic (now the Atlantic, Birmingham & Coast) and served as chief rate clerk in the office

Thomas R. Bryan

of the general passenger agent at Atlanta, Ga., chief clerk and division passenger agent before his appointment as general passenger agent.

R. E. Perry, general freight agent of the Canadian National, with headquarters at Montreal, has been appointed assistant freight traffic manager, Central region, with headquarters at Toronto. Mr Perry was born at Drayton, Ont., in 1876, and entered railway service with the Intercolonial in 1898, as a clerk in the traffic department at Montreal. He

R. E. Perry

was made chief clerk in May, 1903, promoted to assistant general freight agent in 1909, and in 1914 was made assistant general freight agent at Moncton, N. B. In 1919, Mr. Perry returned to Montreal as assistant general freight agent, Canadian National, and in 1923 became manager of the tariff bureau here. In 1924 he became manager of the freight tariff bureau, and in 1926 was promoted to the position of general freight agent of the Canadian National at Montreal.

Engineering, Maintenance of Way and Signaling

E. L. Wood has been appointed assistant engineer of the Mississippi Central, with headquatrers at Hattiesburg, Miss.

Walter J. Kocher, signal inspector of the Lehigh Valley, with headquarters at Bethlehem, Pa., has been appointed assistant signal engineer with the same headquarters.

W. W. Salisbury, roadmaster on the Kansas City (Mo.) terminal of the Missouri Pacific, has been promoted to assistant division engineer at the same point.

R. H. Crew, assistant division engineer on the Philadelphia Terminal division of the Pennsylvania, has been promoted to division engineer of the Akron division, with headquarters at Akron, Ohio.

E. L. Potarf, division engineer on the Sterling division of the Chicago, Burlington & Quincy, with headquarters at Alliance, Neb., has been promoted to engineer maintenance of way, with the same headquarters, succeeding **E. H.** Piper, who has been transferred to Lincoln, Neb.

Vincent H. Doyle, office engineer in the valuation department of the Chesapeake & Ohio, has been promoted to valuation engineer of the Pere Marquette, with headquarters at Detroit, Mich., and has been succeeded by **Victor R. Krueger,** assistant engineer in the valuation department of the Chesapeake & Ohio at Richmond.

Mechanical

H. A. Harris, general car foreman of the Chicago & Alton, with headquarters at Bloomington, Ill., has been appointed acting master car builder, with the same headquarters, to succeed **P. W. Helwig,** who has been granted a leave of absence, and is succeeded by **J. E. Ong,** assistant general car foreman.

John Clark, general foreman, freight car department, of the Central of New Jersey, with headquarters at Ashley, Pa., has been appointed superintendent

John Clark

of the car department, with headquarters at Jersey City, N. J. Mr. Clark was born at Greenfield, Mass., on March 10, 1895. He entered railroad service in 1912 as car repairman on the

Boston & Maine. On April 22, 1916 he was appointed joint foreman, Boston & Maine and New York, New Haven & Hartford, serving in that position until August 1, 1924, when he became district car inspector for the Boston & Maine. On July 1, 1925 he was appointed general foreman of the Boston & Maine at East Deerfield, Mass., and a year later left this road to take over a similar position with the Central of New Jersey, which he has held until his recent appointment.

Purchases and Stores

C. R. Hosking, storeroom accountant on the Missouri-Illinois at Bonne Terre, Mo., has been promoted to division storekeeper, with headquarters at the same point, succeeding **W. H. Butler,** who has resigned to become city clerk of Sparta, Ill.

Special

F. Q. Tredway, assistant general advertising agent of the Southern Pacific, has been appointed to the position of general advertising agent, with headquarters at San Francisco. Mr. Tredway attended the University of California and served during the war as a member of the aviation corps. After several years of newspaper work following the armistice, he entered railway service in 1928 as associate editor of the Southern Pacific news bureau. He was later appointed editor of the bureau, and then assistant manager of development and colonization. In July, 1928, he was transferred to the position of assistant general advertising agent, which position he held until his recent appointment as general advertising agent.

Obituary

A. E. Smith, division engineer of the Chicago, Burlington & Quincy, with headquarters at Galesburg, Ill., died on January 6.

Frank T. Byrne, southwestern agent for the Pere Marquette, with headquarters at St. Louis, Mo., died at his home in that city on December 22 after an illness of 10 weeks.

G. F. Richardson, superintendent of transportation of the Southern Pacific from 1895 to 1929, died at his home at San Francisco, Cal., on November 7.

Robert C. Andrews, district manager of the car service division of the American Railway Association, with headquarters at Dallas, Tex., died in that city on January 13, at the age of fifty-five years. Mr. Andrews had been in railway service since the age of eighteen, when he became a telegraph operator on the Texas & Pacific at Big Spring, Tex. He advanced through various positions including that of superintendent of the eastern division and general superintendent. He had been district manager of the car service division at Dallas since 1924.

George DeHaven, general passenger agent of the Pere Marquette in 1900 and lately associated with Rand, McNally & Co., Chicago, died in that city on January 4. He was born at Philadelphia, Pa., and entered railway service in June, 1876, as a ticket agent in the union office at Philadelphia. From June, 1880, to June, 1884, he was advertising agent for the Pennsylvania, and for the next three years was passenger agent for the Baltimore district. From February, 1887, to October, 1891, he was assistant general passenger agent of the Lake Erie & Western (now a part of the New York, Chicago & St. Louis) and from the latter date to January 1, 1900, he was general passenger agent of the Chicago & West Michigan and the Detroit, Lansing & Northern. When these roads were taken over by the Pere Marquette on January 1, 1900, he was made general passenger agent of the Grand Rapids district, which position he held until November 1 of that year when he resigned to become excursion manager of the Baltimore & Ohio. In 1910, he became associated with Rand, McNally & Co.

Martin M. Dick, district master car builder of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Terre Haute, Ind., died on December 25 after a prolonged illness. He was born on June 18, 1868, at Corydon, Ind., and was first employed by the Ohio Falls Car Works After remaining with this company from August 28, 1882, to September 1, 1887, he entered the employ of the Louisville & Nashville as a coach repairer, which position he held until January 1, 1888, when he returned to the Ohio Falls Car Works. From April 12, 1897, to June 1, 1914, he was employed as a coach carpenter on the Chicago, Indianapolis & Louisville, as an inspector on the Wabash and as a car foreman on the Chicago, Indianapolis & Louisville. On the latter date he was appointed master car builder of the Chicago, Terre Haute & South Eastern, and on July 1, 1921, was made district general car foreman of the Chicago, Milwaukee, St. Paul & Pacific. He was promoted to district master car builder of the Chicago, Milwaukee, St. Paul & Pacific on January 1, 1928, which position he held at the time of his death.

B. B. Kelliher, former chief engineer of the Grand Trunk Pacific (now part of the Canadian National) and at one time assistant to the president of the Denver & Rio Grande Western, died at London, England, on November 7. Mr. Kelliher had been a railway civil engineer in Ireland, Canada and the United States for about 38 years. He was born at Castle Island, County Kerry, Ireland, on December 26, 1862, and attended Dublin University, then serving as an apprentice to a civil engineer in Dublin. He was engaged on surveys for the Mitchellstown & Fermoy and the Galway & Clifton in Ireland, coming to the United States in 1886 where he was successively connected with the engineering departments of the Union Pacific, the Northern Pacific and the Anaconda Copper Company. In 1897 he was appointed division engineer on the Oregon Short Line, then acting as resident engineer in charge of location of the Denver, Northwestern & Pacific (now the Denver & Salt Lake) and division engineer of the Grand Trunk Pacific at Winnipeg, Man. In 1905 Mr. Kelliher was promoted to chief engineer of the latter road and it was under his direction that the line was completed to Prince Rupert, B. C., and Vancouver on the Pacific Coast. Following three years spent in Ireland, he returned to the United States in 1917 to supervise the construction of the Spruce Railroad on the Olympic Peninsula for the United States Government. From 1921 to 1923 he served as assistant to the president of the Denver & Rio Grande Western, with headquarters at Denver, Colo., retiring from railway service on the later date. Since 1923 Mr. Kelliher had resided in Ireland.

Major Benjamin S. Wathen, who retired as chief engineer of the Texas & Pacific, with headquarters at Dallas, Tex., in 1912, died in that city on December 30 after a long illness. He was born on March 4, 1845, in Kentucky, and entered railway service in June, 1865, as a rodman on construction for the Louisville & Nashville. From 1867 to October, 1869, he served as leveler on surveys and division engineer on the construction of the Elizabethtown & Paducah (now a part of the I. C.) while from May, 1870, to August, 1874, he was locating engineer and assistant chief engineer of the International Great Northern. During the following year, he served as chief engineer of the Tyler Tap (now a part of the St. Louis Southwestern) and from 1875 to 1879 as engineer and superintendent of the Henderson & Overton (now a part of the I. G. N.), while in 1876, he was also chief engineer of location for the Texas & Pacific. In 1879 he was in charge of surveys and chief engineer of the St. Louis, Arkansas & Texas (now a part of the St. Louis Southwestern), and in November of that year he was appointed chief engineer of the Texas & Pacific, serving until June, 1881, when he became chief engineer of the Oriental of Mexico. In 1885, he was engineer in charge of location for the Missouri Pacific, while from 1886 to 1891, he was chief engineer of this road in Texas. In the latter year he was chief engineer of the Red River & Southwestern and president of the Dallas Rapid Transit Railway. He was appointed chief engineer of the Texas & Pacific in May, 1892, and held this position until his retirement in 1912.